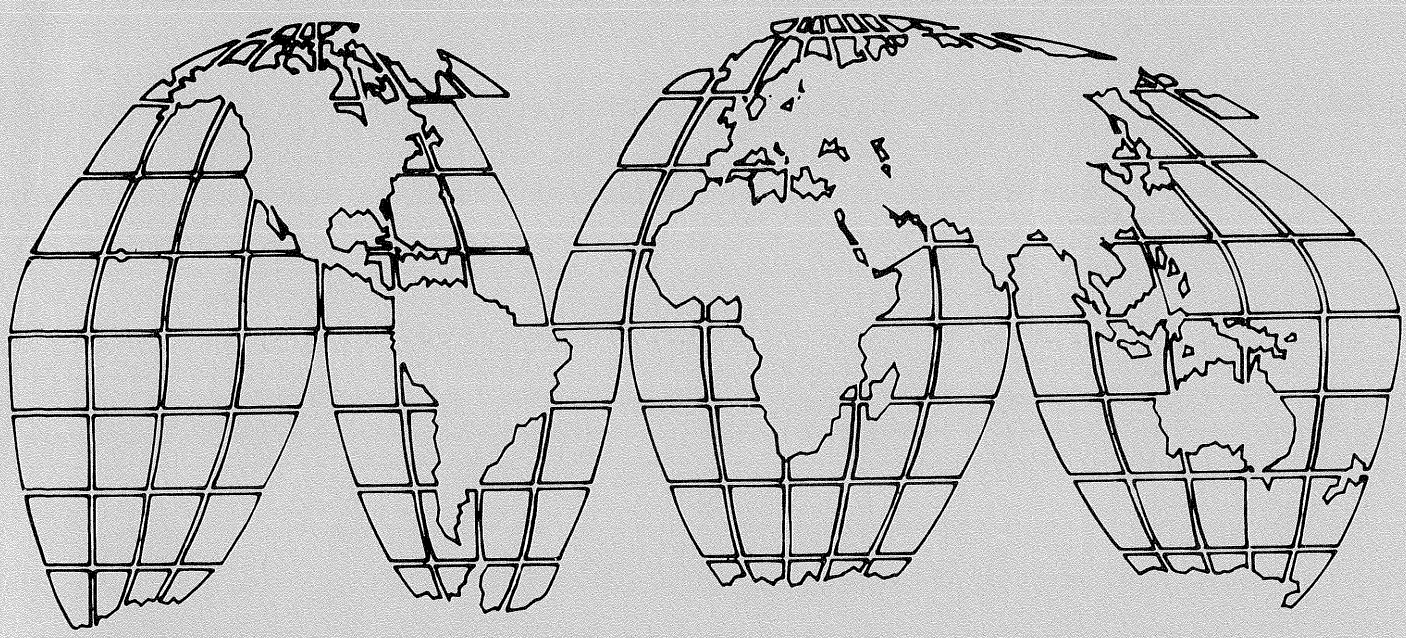
A.I.D. Evaluation Special Study No. 50

An Evaluation of the African Emergency Food Assistance Program in Sudan, 1984-1985



June 1987

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AN EVALUATION OF THE AFRICAN EMERGENCY FOOD ASSISTANCE PROGRAM IN SUDAN, 1984-1985

A.I.D. EVALUATION SPECIAL STUDY NO. 50

by

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U. S. Agency for International Development

June 1987

TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

LIST OF TABLES AND FIGURES

LIST OF TABLES AND FIGURES (cont.)

FOREWORD

The 1984-1986 drought in Africa resulted in the continent's most severe famine in recorded history. Countless lives were saved by the massive outpouring of assistance from around the world. The U.S. response to this crisis was larger than that of any other donor nation as a result of the concerted efforts of numerous Government agencies, private voluntary organizations, businesses, and U.S. citizens.

To reflect on and record the lessons learned from our response to the emergency, the Agency for International Development commissioned assessments of the U.S.-financed emergency activities. This report presents the findings concerning the U.S. effort in Sudan; separate reports have also been published for Chad and Mali. The findings of these three studies were consolidated in another report, The U.S. Response to the African Famine, 1984-1986, Vol. I, An Evaluation of the Emergency Food Assistance Program: Synthesis Report. A companion report, Vol. II, An Analysis of Policy Formation and Program Management, focuses on policy and management issues, including legislation and funding, early warning systems, donor relations, the role of the commercial sector, public and congressional relations, and the transition to development.

The lessons learned from this emergency should guide us in responding to such disasters and provide insights for determining the actions necessary to abate the ravages of future droughts.

Haven W. North
Associate Assistant Administrator
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Agency for International Development

ACKNOWLEDGMENTS

The evaluation team would like to express its sincere gratitude to the many people, both in Washington and in the field, who gave of their time, experience, and know-how in helping the team carry out this evaluation of the 1984-1985 emergency food assistance program in Sudan. Their frank assessments of the work and the problems encountered have been most valuable in enabling the evaluation team to make practical, positive recommendations for the future.

Representatives of the Government of Sudan, the USAID Mission in Sudan (USAID/Sudan), the U.S. Embassy, private voluntary organizations (PVOs), U.N. agencies, and the principal private sector contractor (Arkel-Talab) all gave generously of their time, despite their inundation with visitors over the last several months.

Those from USAID/Sudan, U.N. agencies, the European Economic Community, PVOs, and other groups who helped transport the team by airplane, helicopter, and four-wheel drive vehicle were of invaluable service, enabling team members to have a good look at the field situation in the regional centers and to visit severely affected villages, refugee camps, and other similar sites.

Without the help of the responsible host government officials, private sector managers, and PVO headquarters and field staff, it would have been impossible to cover the ground necessary in the 2 1/2 weeks spent in Sudan. The 4 days of preparation in Washington prior to going to the field were particularly useful.

A special thank you goes to USAID Mission Director W. Robert Brown and the USAID Mission Food Emergency Coordinator, Dave Martella, who were instrumental in explaining the past as well as future plans for 1986. The team's backstop officer in A.I.D. Washington, Judy Gilmore, performed a vital role by assisting the team in all aspects of its work.

SUMMARY

PURPOSE, SCOPE, AND METHODOLOGY

The principal purposes of the Sudan evaluation were to assess the timeliness, appropriateness, and impact of the 1984-1985 food emergency assistance efforts; recommend measures for improving future U.S. emergency food assistance and disaster relief programs; and consider measures for improving the design of emergency food programs in Africa by relating them more closely to national food strategies, including rehabilitation and longer term development.

The generic scope of the evaluation (see Appendix A) illustrates the many issues considered during the course of the preparation, fieldwork, and writing of the evaluation report.

For its evaluation methodology, the team depended on reviews of secondary sources, interviews, and observations in both Washington, D.C., and Sudan.

THE 1984-1985 FOOD EMERGENCY IN SUDAN: SETTING AND CONSTRAINTS

Sudan, a huge underdeveloped country, was ill-equipped to respond to a major food emergency. The size of the United States east of the Mississippi, Sudan has a population of 21.5 million and a literacy rate of only 15 percent (25 percent for men and 5 percent for women). Sudan's climate is difficult and in the past few years has led to inadequate food supplies in the vulnerable regions of the country.

Extremely weak communications and transport are major barriers to development and to emergency responses. Sudan has only 1,396 miles of paved roads (Washington, D.C. has 1,100 miles) and a system of unpaved roads and marked tracks, much of which is impassible in the rainy season (June through September).

Deeply in debt (about US$9.0 billion), Sudan has faced an acute shortage of foreign exchange during the last few years. Exports were down 50 percent in 1985. Inflation has been about 15 percent annually for the last 4 or 5 years. Overall the Government of Sudan's financial situations is not good.

The Government of Sudan has been weak and unstable. The coup d'etat on April 7, 1985 and civil disorder have hindered the Government's ability to respond to development and emergency needs. Moreover, the management and administrative capability of

the Government of Sudan has been inadequate to deal effectively with the problems of such a vast, poor nation. Recent decentralization increased the difficulty of coordination between the Central Government and the regional governments.

The 1984-1985 Food Emergency

The 1984/1985 crop year was the fourth affected by a drought that grew in severity each year. In comparison to the 1980-1981 good crop year, 1981-1982 food grain production (sorghum, millet, and wheat) was 63 percent, 1982-1983 production was 57 percent, and 1983-1984 production was only 40 percent. During 1984-1985, USAID estimates of Sudan's at-risk population suffering seriously from lack of food increased from 1 million to 6-9 million. The rural population was particularly vulnerable to food shortages going into the fourth year of the drought.

This was unusual for Sudan, which in normal years is a food surplus country that exports sorghum. Sudan had not had a continuing major drought for 20 to 25 years. As a result, there were no early warning systems, food emergency preplanning units, or other famine relief mechanisms in place from previous droughts.

The Massive U.S. and Other Donor Emergency Relief Effort

The 1984-1985 emergency food problem in Sudan increased continually until a truly massive relief effort was undertaken. In March 1984, The USAID Mission alerted A.I.D./Washington to the emergency food problem. In June 1984, the Mission requested 67,000 metric tons (MT) of Title II emergency food. By March 1985, just 10 months later, the Mission's total requests for emergency food had increased to 837,000 MT--817,000 MT of sorghum for general feeding and 20,000 MT of food for supplemental feeding programs. A.I.D./Washington approvals followed a similar pattern, rising from 82,000 MT in September 1984 to 507,000 MT in April 1985. In addition, A.I.D./Washington approved Title I shipments of 315,000 MT in FY 1985 to meet urban food needs.

In coordination with other donors, the United States took responsibility for the food emergency in the Kordofan and Darfur regions in the west, where a large portion of the at-risk population was located. USAID's goal for its emergency food assistance effort was to supply adequate rations in a timely manner to all those at risk in their villages. Its strategy was to pre-position food near the at-risk population prior to the beginning of the June 1985 rainy season, contracting a private sector trucking company (Arkel-Talab), the Sudanese Railroad Corporation, and private voluntary organizations (CARE and Save the Children/UK) to transport and distribute the food. The Government of Sudan's

involvement was limited to providing the contracting mechanism for private sector transport and counterpart funds to finance the transport. At the local level, the relief effort relied on village leaders to allocate food.

The evaluation team concentrated on Western Sudan, which was an area of prime U.S. responsibility. Time constraints did not permit examination of the Mission's support for other areas of Sudan, which the team understands went well, such as in the Kassala province in the Eastern region and in the Northern and Red Sea Hills areas. The USAID Mission also worked closely with the U.N. High Commissioner for Refugees to ensure adequate food supplies for the refugee program.

EVALUATION RESULTS

A.I.D.'s food emergency assistance effort made a critical difference for millions of people who in 1984-1985 did not have enough to eat, but it could have had even greater impact and been more cost-effective. A massive program undertaken in a country where food emergencies are infrequent, the USAID Mission and A.I.D./ Washington efforts deserve much praise for having overcome many major constraints as the emergency situation unfolded. As a result, over 1.0 million MT of emergency food was brought into Sudan and sold in urban areas or distributed among the rural people, some in very inaccessible areas. Many lives were saved and much suffering was alleviated by this food assistance. Overall, A.I.D. undertook a major effort and performed well under the circumstances.

The evaluation team's main task was to determine how such an immense emergency food assistance undertaking could be improved if another such crisis occurred in Sudan or elsewhere. This required a review of achievements and shortcomings and a sharp eye for ways of improving performance. This bias in the evaluation toward improvement should not detract from the major successes achieved by A.I.D. in Sudan in 1984-1985.

A.I.D.'s emergency food assistance program did not fully achieve its goal regarding quantity, timeliness, or appropriateness of food distributed. Its program could have had even more impact and been more cost-effective had timing, management, preparation for unforeseen events, and impact been dealt with more successfully. Lessons learned in these areas can fruitfully be applied in dealing with Sudan's 1986 food emergency.

-- The performance of other donors and international agencies was an important determinant of A.I.D.'s overall success; however, too much responsibility was left to the Mission.

-- The USAID Mission's strategy of using the private sector, local governments, and PVOs was effective and would have worked even better but for the rainy season. The strategy resulted in increased private sector, PVO, and local government activity and strengthened indigenous capacity to assist in the feeding programs.

-- The failure to link food emergency efforts and longer term development led to very late rehabilitation responses (such as provision of sorghum seed) despite in situ feeding.

Recommendations

-- A.I.D./Washington should refine its management of food emergencies in Sudan rather than try to use existing management personnel, practices, and systems. It should focus, via an early management review, on the sufficiency and experience of management personnel and the adequacy of intended management practices in each food emergency.

-- A.I.D. should provide sufficient experienced personnel to USAID/Sudan when it must deal with food emergencies. A computerized A.I.D. roster listing such Agency personnel should be developed.

-- A.I.D./Washington should take major responsibility for the coordination of donors and international agencies involved in assisting Sudan with its food emergency in 1986.

-- USAID/Sudan should extend and improve its strategy of using the private sector, local governments, and PVOs to help manage and implement its emergency food program in 1986.

-- USAID/Sudan should plan its emergency food assistance in 1986 in the context of longer term development from the very beginning. Particular attention should be given to food-for-work activities and the long-run issue of whether people should be encouraged to remain in the arid North.

Impact

The 1984-1985 emergency food assistance made a critical difference for beneficiaries, but food arrived late and in insufficient amounts to meet minimum needs.

Findings

-- Sudan was already experienced in handling Title I and III assistance, which readily expanded to meet the needs of city dwellers during the 1984-1985 drought.

-- Rural people received too little food too late to meet their needs. Those in easy-to-reach areas got more food sooner than those in inaccessible areas.

-- By November 1985, the program had reached even remote villages with some food. Some of these villages were accessible during the rainy season only by helicopter.

-- The available data were inadequate (especially longitudinal data) to enable rigorous assessment of program impacts.

-- The Sudanese people used many strategies to stay alive. They ate famine foods; sold their jewelry, cattle, and farm implements; purchased food in urban areas; sent household members to town to work so they could buy food; relied on their extended families for food handouts; or lived temporarily with extended family members or migrated to towns or camps where food was more available.

-- By the end of the 1985 drought year, most people seriously affected by the drought had exhausted their reserves--jewelry, seed stocks, extended family welcome, famine foods, and, in many cases, their own nutritional status. Their 1984/1985 harvest plus emergency food supplies will determine how they fare in 1986.

-- With the advent of rehabilitation efforts, a better 1984/1985 crop, and the existence of some people still in need of food, food-for-work programs by PVOs could be initiated. Numerous food-for-work projects would be consonant with A.I.D.'s long-term development program.

-- General feeding was not programmed jointly with supplemental feeding or health inputs. Supplemental feeding was initiated late in the 1984-1985 period, and health inputs were never seriously introduced, amounting to only US$0.02 per person in the serious at-risk category.

-- Monetization of Title II food did not work well because of lack of accountability for sales proceeds and lack of distribution and financial controls, which led to diversions of emergency food supplies from rural beneficiaries to town markets.

-- The rations used were consistent with the diet of the beneficiaries.

-- PVOs were important to good program impact because they effectively identified needy people and distributed food to them on a consistent basis.

-- The private sector helped ensure program impact by getting major quantities of food to beneficiaries. Private sector distribution diminished program impact because food was delivered to easy-to-reach sites first and inaccessible areas were avoided. (This resulted from the loose terms of the contract with the private sector trucking company.)

-- Rural people were able to stay in their villages, and the emergency food program contributed substantially to this achievement.

Conclusions

-- The food delivered to rural beneficiaries was very important and made a critical difference in keeping many of them alive and in their villages. It was, however, not adequate to meet all of their requirements; it met the short-run needs of many just as their other reserves were becoming exhausted. Thus, its marginal value was extremely high.

-- Beneficiaries had much deeper reserves, or better traditional coping systems, than anticipated. Thus, even though A.I.D. arrived late with too little food, fewer appear to have died than expected.

-- Some of the at-risk population needs to catch up in order to overcome some of the negative impacts of the inadequate food deliveries during 1984-1985 and the excessive reductions of their reserves. Supplemental feeding and food for work are appropriate mechanisms to assist in this process.

-- The slow start of supplemental feeding and the lack of health inputs as companions to general feeding lessened the positive impact of the program, especially on disad-

vantaged groups--children, lactating mothers, and the aged.

-- Targeting particular groups in need, even during the worst of the pressures of the emergency, would have improved the impact of the program.

-- The lack of timeliness of the program reduced its impact by reducing the overall availability of food when it was needed, by not adequately meeting the needs of those in inaccessible areas, and by delaying the introduction of supplemental feeding.

-- USAID/Sudan developed an appropriate ration based on foods people were used to eating, a selection that increased the impact of the program.

-- Additional data are necessary to adequately assess program impacts.

-- Being fed in their villages enabled farmers to take immediate advantage of the June to September 1985 rains and to quickly re-enter economic activity.

-- Management of in situ free distribution programs by PVOs and local governments in 1985 was good. This experience provides a basis for better future targeting of beneficiaries, experimental use of monetization, and some food-for-work projects. The latter would explicitly link emergency food assistance to long-term development and encourage USAID/Sudan to plan accordingly.

Recommendations

-- Improving the timeliness of food emergency assistance should be a high-priority means of improving program impact in 1986.

-- Aggressive donor coordination should be undertaken in 1986, especially by A.I.D./Washington, to improve overall program impact.

-- Private sector participation, while an excellent strategy element, should be better controlled in 1986 to enable continual targeting of the most needy by the emergency food assistance program manager.

-- General and supplemental feeding and health inputs should be planned and implemented together in 1986 to increase the impact of the program on the most vulnerable and needy in the at-risk population.

-- Supplemental feeding should be continued in 1986 until USAID/Sudan is assured that the severely at-risk population has sufficiently recouped its reserves, including some on-farm food stocks, and is thus no longer at risk.

-- PVOs should continue to be used in 1986 to distribute food to ensure good program impact.

-- In situ feeding should be continued in 1986 to achieve maximum program impact, but it should be carefully targeted. Food-for-work projects run by PVOs in cooperation with village leaders should be linked directly to USAID/Sudan's long-term development strategy.

-- The attempt to monetize Title II food in 1984-1985 should be examined by USAID/Sudan and lessons learned distilled from the experience. Based on these lessons learned and its success in other countries, monetization should be tried again in 1986, despite past difficulties with it in Sudan.

-- Two studies should be undertaken in 1986. First, baselines should be established in the areas where PVOs will be working. Second, the phenomenon of famine foods and the other traditional coping methods that allowed Sudanese to survive beyond the Mission's most optimistic assessment should be studied.

Unforeseen Situations

Numerous unanticipated events adversely affected A.I.D.'s emergency food program, some of which could have been better planned for and responded to.

Findings

-- Substantial planning for pre-positioning food prior to the rainy season went into the 1984-1985 emergency food assistance effort. However, little useful contingency planning was carried out, and an alternative action plan was never prepared after pre-positioning became impossible.

-- Once pre-positioning was no longer possible, Murphy's Law seemed to take effect, and the Mission's strategy began to unravel.

Conclusions

-- Substantial planning was carried out by USAID/Sudan at the beginning of the 1984-1985 period. But much went wrong anyway.

-- USAID/Sudan could have controlled for some of the unforeseen events by developing contingency plans, installing better management practices, improving available information, providing extra time and funding in the program, and involving others (such as other donors, the private sector, and PVOs) to share the risk of the implementation tasks.

Recommendations

-- USAID/Sudan should develop contingency plans in advance for changes in conditions or events that would substantially affect program impact in 1986.

-- The information base for planning and decision-making should be improved in critical areas (e.g., baseline nutritional status, logistics capacity).

-- A margin for error should be applied to 1986 program areas where full contingency planning is not undertaken.

-- Local control should be expanded whenever possible, and local people/organizations should be given enough resources to carry out their responsibilities effectively.

A.I.D.'s 1986 Strategy for Emergency Food Assistance in Sudan

A.I.D.'s 1986 strategy is appropriate, but accomplishing it successfully while meeting U.S. interests and the needs of Sudanese beneficiaries will be difficult.

Findings

-- The United States has informed the U.N. and, through the U.N., the other donors that it plans to provide only up to 50 percent of the aid needed in 1986.

-- There is a serious danger of repeating in 1986 one of the major causes of difficulty in 1985: failing to pre-position food before the rainy season.

  - First, no one is certain of the size of the Sudanese 1985/1986 harvest. This has delayed USAID/Sudan's

and A.I.D./Washington's actions in setting and approving firm food import targets.

- Second, the United Nations Office of Emergency Operations/Sudan (UNEOS) may not be able to find sufficient food and financing to meet its 50-percent target.

Conclusions

-- Although shifting the central responsibility for emergency food assistance to the U.N. is appropriate, accomplishing this change successfully will require donor cooperation and early decision-making about Sudan's 1986 emergency food needs. The U.N. also must carry out its role in the 1986 activities effectively, or the United States will have to return to the situation in a major way or stand by while many of Sudan's poorest people face food emergency conditions without help.

-- U.S. support of the U.N.'s role in Sudan will be central to the success of the U.S. strategy for dealing with the anticipated 1986 food emergency.

-- The inability to estimate the size of each annual harvest before the harvest is in creates intense timing problems in implementing Sudan's food emergency assistance because donors are unwilling to make decisions based on incomplete crop information.

Recommendations

-- A.I.D. should prepare immediately a time-phased action plan to successfully deliver, before the rainy season in June, the "up-to-50 percent" of the food needs that the United States is prepared to provide in 1986.

-- A.I.D./Washington should review the PVO programs for 1986 already submitted by USAID/Sudan and, after necessary modifications are made, approve them as soon as possible.

-- A.I.D./Washington should consider, without delay, the USAID/Sudan proposal to turn over to the World Food Program (WFP) the 100,000 MT of Title II sorghum sent out under the 1984-1985 program.

- If A.I.D./Washington approves, it should work with U.N. headquarters to ensure that the funding neces-

sary to distribute the sorghum is made available to WFP.

- If A.I.D./Washington does not transfer the sorghum, the grain should be used for feeding programs, and the excess pre-positioned prior to the rainy season.

-- The UNEOS in New York should be urged to develop immediately a time-phased action plan to obtain its share of the 50 percent of 1986 emergency food needs from other donors. A.I.D./Washington and the Department of State, through appropriate diplomatic channels, should help UNEOS persuade major donors to respond to the U.N. adequately and in a timely fashion.

-- USAID/Sudan should work with the Government of Sudan and UNEOS to produce, as soon as possible, the agreed-on crop estimates and a firm recommendation on local purchase of sorghum, or any appropriate variation (e.g., a mix of sorghum and millet).

-- The UNEOS and USAID/Sudan should start now to develop an operational rehabilitation/long-term development plan for 1986.

Generic Principles for Planning and Implementing Emergency Food Programs

The following is a tentative list of generic principles for planning and implementing emergency food assistance efforts, drawn from the Sudanese context.

1. Preplanning is crucial; once an emergency is evident there is never enough time to prepare.

2. Timing is everything; decisions should be made early and should be definitive.

3. Information is always insufficient; decide anyway.

4. Adequacy is central; do not under-resource.

5. Flexibility is necessary; do not be afraid to try a new approach.

6. Emergencies take place in the context of longer-term development; relate emergency assistance to long-term development.

7. The government may not provide the best implementing agency; try the private sector.

8. General and supplementary feeding and health inputs go together; package them appropriately.

9. Droughts have stages; plan and implement accordingly.

10. Even the best efforts sometimes fail; have a backup plan.

11. Impact is ephemeral; monitor and evaluate it carefully.

12. Management is fundamental; ensure its excellence.

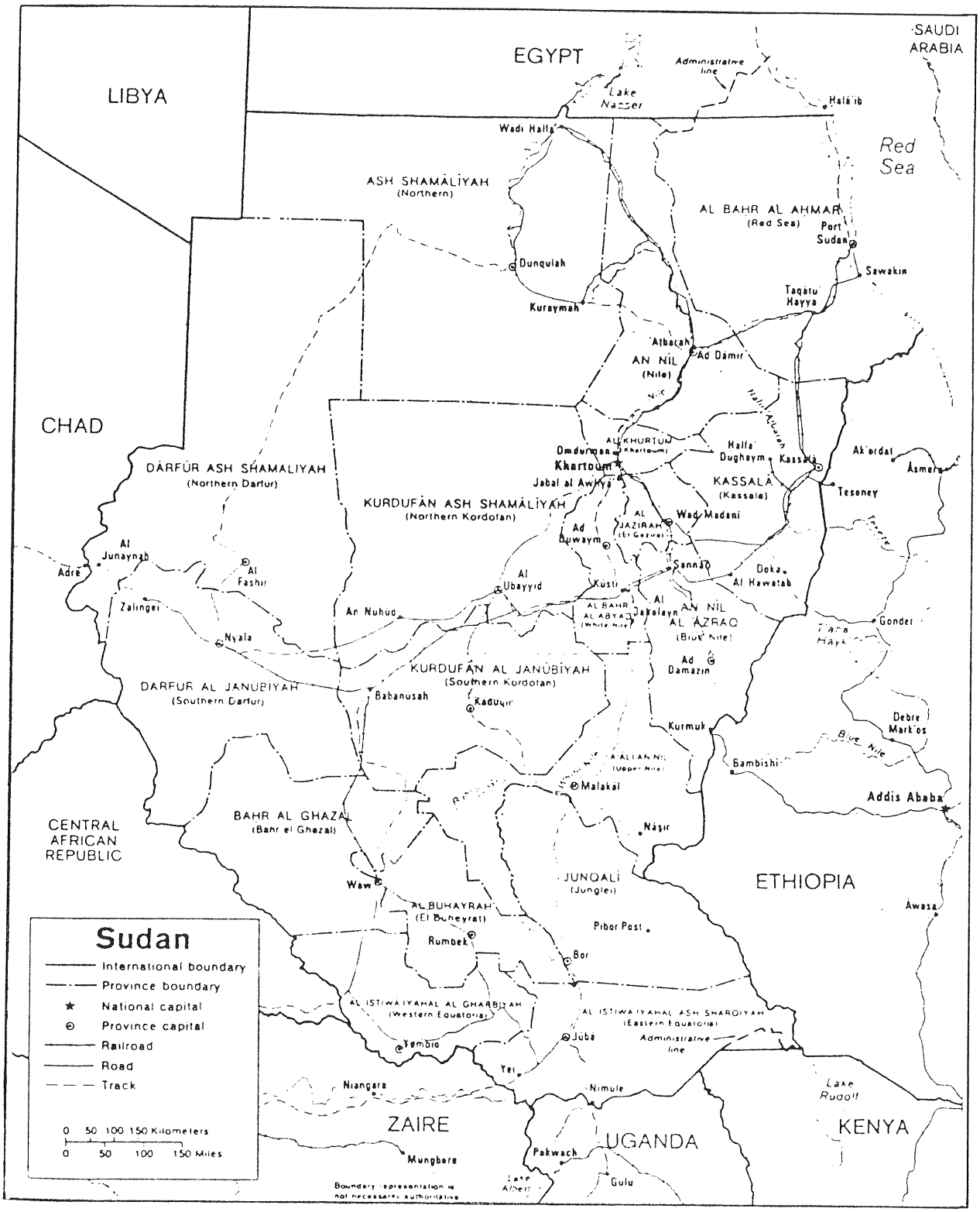
GLOSSARY

A.I.D.	-	Agency for International Development
CRS	-	Catholic Relief Services
EEC	-	European Economic Community
FANA	-	Food Aid National Administration
FAO	-	Food and Agriculture Organization
IARA	-	Islamic African Relief Agency
LICROS	-	League of International Red Cross-Sudan
LRCS	-	League of Red Cross and Red Crescent Societies
LS	-	Sudanese pound (US$1.00 = LS 3.3 in October 1985)
MSF	-	Medecins sans Frontieres
MT	-	metric tons
ODA	-	British Overseas Development Agency
OXFAM	-	Oxford Committee for Famine Relief
PVO	-	private voluntary organization
REDSO	-	A.I.D. Regional Economic Development Services Office
RRC	-	Relief and Rehabilitation Commission
SCF/U.K.	-	Save the Children Fund/United Kingdom
SCF/U.S.	-	Save the Children Fund/United States
SRC	-	Sudan Railroad Company
UNDP	-	United Nations Development Program
UNDRO	-	Office of United Nations Disaster Relief
UNEOS	-	United Nations Office of Emergency Operations/Sudan
UNHCR	-	Office of the United Nations High Commissioner for Refugees
UNICEF	-	United Nations Children's Fund

GLOSSARY (cont.)

UNOEA	-	United Nations Office for Emergency Operations in Africa
WFP	-	World Food Program
WHO	-	World Health Organization
WVRO	-	World Vision Relief Organization

Map of Sudan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Lake Nasser
Administrative line
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Halaib
ASH SHAMALIYAH (Northern)
AL BAHR AL AHMAR (Red Sea)
Port Sudan
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Dunqulah
Kuraymah
Taqatu Hayya
Atbarah
Ad Damir
AN NIL (Nile)
AL KHURTUM (Khartoum)
Omdurman
Khartoum
Halfa Dughaym
Kassala
Akordat
Asmera
Jabal al Awliya
KASSALA (Kassala)
Tesseney
DARFUR ASH SHAMALIYAH (Northern Darfur)
KURDUFAN ASH SHAMALIYAH (Northern Kordofan)
AL JAZIRAH (El Gezira)
Wad Madani
Ad Duwaym
Sannar
Doka
Al Hawatah
Al Junaynah
Adre
Al Fashir
Al Ubayyid
Kusti
Zalingei
An Nuhud
AL BAHR AL ABYAD (White Nile)
Jabalayn
AN NIL AL AZRAQ (Blue Nile)
Gonder
Nyala
Ad Damazin
KURDUFAN AL JANUBIYAH (Southern Kordofan)
DARFUR AL JANUBIYAH (Southern Darfur)
Babanusah
Kadugli
Kurmuk
Debre Mark'os
Blue Nile
Bambishi
Malakal
Addis Ababa
BAHR AL GHAZAL (Bahr el Ghazal)
Nasir
Waw
JUNQALI (Jungle)
AL BUHAYRAH (El Buheyrat)
Awasa
Pibor Post
Rumbek
Bor
AL ISTIWAIYAHAL AL GHARBIYAH (Western Equatoria)
AL ISTIWAIYAHAL ASH SHARQIYAH (Eastern Equatoria)
Yambio
Juba
Administrative line
Yei
Niangara
Nimule
Lake Rudolf
Mungbere
Pakwach
Gulu
Lake Albert
Sudan
International boundary
Province boundary
National capital
Province capital
Railroad
Road
Track
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Boundary representation is not necessarily authoritative

1. INTRODUCTION

1.1 Purpose and Scope of the Evaluation

The principal purposes of the evaluation were (1) to assess the timeliness, appropriateness, and impact of the 1984-1985 food emergency assistance efforts in Sudan; (2) to recommend measures to improve future U.S. emergency food assistance and disaster relief programs in Sudan; and (3) to consider measures to improve the design of emergency food programs in Africa in order to relate them more closely with national food strategies, including rehabilitation and longer term development.

The generic scope of the evaluation (see Appendix A) presents the points to be considered in the evaluation of the overall project. In general, this study encompasses the various points set forth in the statement of work. However, only questions that apply to the Sudan situation are specifically addressed in this report. Generic suggestions are drawn from the experience in Sudan.

1.2 Evaluation Methodology

The Sudan evaluation team, along with the Mali team, spent the first week of the project in Washington, D.C., studying in depth the purpose of the project and defining its scope. The team met with key A.I.D./Washington management and staff to obtain their views concerning the evaluation. The Sudan and Mali teams developed protocols for the various disciplines (institutional, social/nutritional, and logistical), which set forth the basic questions to be studied in the field.

The team spent 18 days (October 21 to November 9, 1985) in Sudan. The individual team members used as prime source material their own observations, field trips, and interviews with top, middle, and front-line management in Government agencies (the Railroad, Port Authority, Food Aid National Administration, and others); village leaders; beneficiaries; the Government's Relief and Rehabilitation Commission (RRC); private voluntary organizations (PVOs) such as CARE, Save the Children Fund (SCF), and Oxford Committee for Famine Relief (OXFAM); international agencies such as the U.N. Office of Emergency Operations-Sudan (UNEOS), the World Health Organization (WHO), the World Food Program (WFP), the Food and Agriculture Organization (FAO), the U.N. Children's Fund (UNICEF), and the U.N. High Commissioner for Refugees (UNHCR); and private sector transportation companies like Arkel-Talab.

In addition, the team relied on secondary sources such as field and headquarter reports of CARE, OXFAM, Save the

Children/U.K., International League of Red Cross-Sudan (LICROS), U.N. reports, technical surveys, and case studies.

1.2.1 Assessments of Institutional Capacity and Responses to the Food Emergency

The team members met with the USAID Mission Director in Sudan and key USAID personnel, the U.S. Ambassador, relevant A.I.D./Washington senior staff, senior Sudanese Government officials (central, regional, and local), U.N. agency heads and staff, PVO heads and field personnel, and private sector management (expatriate and local, headquarters and field).

Background, past history of decision-making, changes in organizational structure, government attitudes and evolution of its thinking during the drought years, relationships to donors, political problems, the condition of the economy, and foreign exchange problems were examined carefully.

A dialogue was opened not only about the 1984-1985 program, but advice was sought from those interviewed on improvements for the future. Ideas were tried out concerning generic findings that might have general application throughout Africa, such as those on preplanning, early warning systems, and donor coordination and relationships.

1.2.2 Examination of Social, Nutritional, and Health Impacts of the Food Emergency and Food Assistance

Fieldwork was carried out in 11 Western villages using a short interview schedule. Included in this random sample were central and satellite villages of northern and southern Darfur and Kordofan regions. Five towns also were visited in which 15 urban women were interviewed. The use of a helicopter to visit distant Northern villages and refugee camps greatly facilitated what would have been an otherwise impossible task given the short period of fieldwork. One hundred and thirty interviews were held with village sheiks, omdahs, health representatives, truckers, merchants, and beneficiaries.

A crop map designed by field monitors from the various PVOs guided the process of village selection; the map provided crop production estimates as a percentage of normal yield by specific location. This map was made for three reasons. First, it allowed some insight into how people responded when the outlook for their crops was poor compared with their responses when they were good. Second, it enabled a study of the relationship between amounts of rainfall in different areas and the amount of

environmental degradation as manifested in varying crop yields. Third, the map was useful in enabling the researcher to understand the need for future targeting of the emergency food assistance program.

The team was able to verify food consumption patterns and food storage in the hard-hit areas of northern Darfur through household visits to the homes of 10 beneficiaries. The Beida Chadian refugee camp was visited to gain perspective on refugees' nutritional and health problems. A visit to the Um Keredim supplemental feeding center provided data on supplementary feeding. The villages of Gonuwa, Domaia, Bulbul, Galit El Kom, Sayah, Beida, Khutum, Sarya, Mado, Sindi, and Um Keredim were also visited. In the towns of Nyala, El Fasher, Zalingei, Melitt, and Al Ubayyid, urban beneficiaries were interviewed about the quantities of sorghum they received from the USAID/Sudan emergency food assistance program.

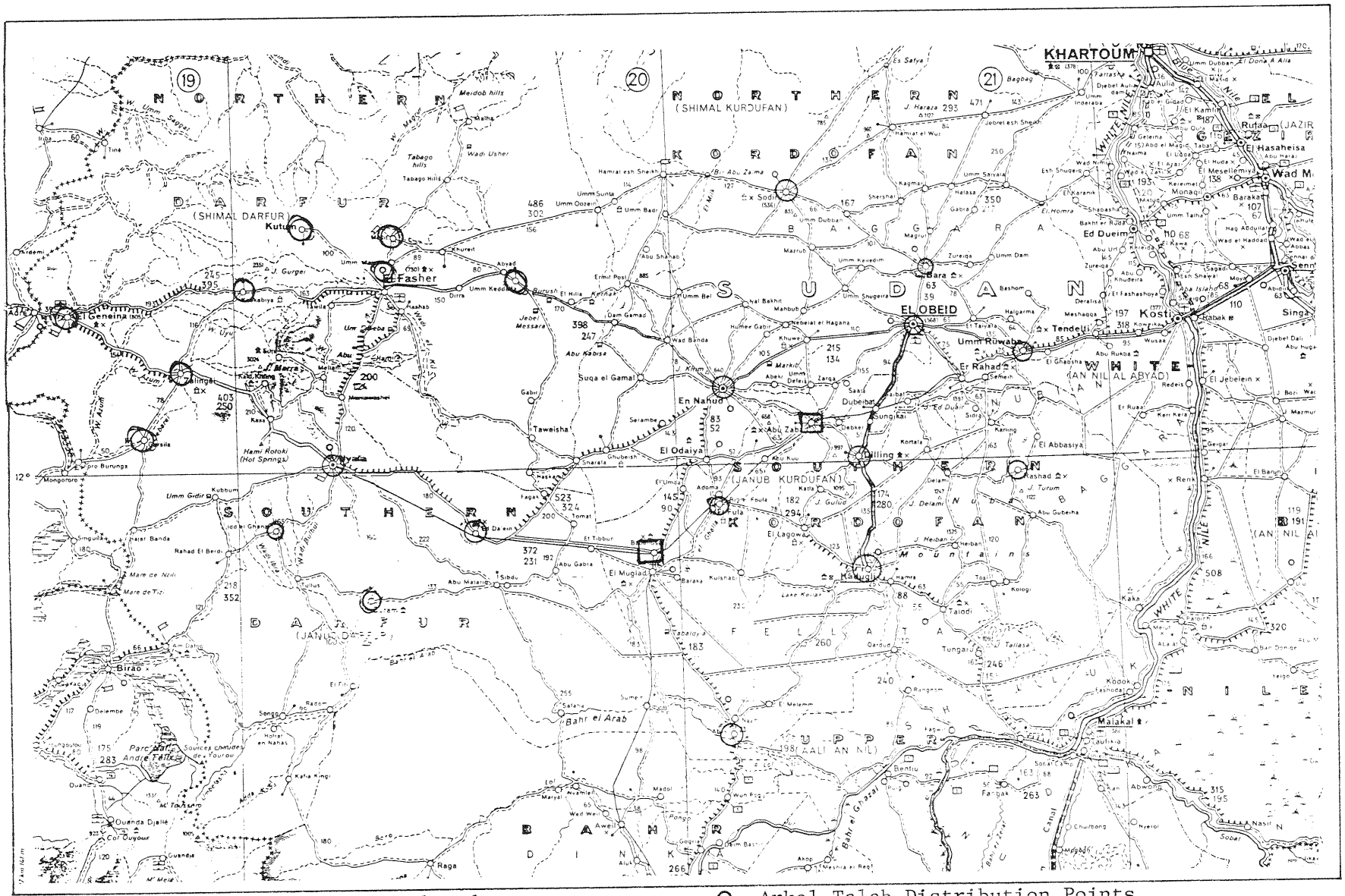
1.2.3 Examination of Logistical Aspects of the Response to the Food Emergency

The team visited Nyala and El Fasher in the Darfur region to observe staging areas for food distribution to the villages, and Port Sudan to review port operations and to visit the head of the railroad. The team also visited the Government's primary contractor for movement of the emergency grain, a private American/Sudanese company (Arkel-Talab). The interviews were conducted in Khartoum and in the field; Arkel-Talab's general manager and senior staff gave generously of their time during the evaluation and supplied detailed shipping records (see Figure 1).

The team also relied on information supplied by USAID/Sudan officers; U.N., PVO, and private sector staff engaged in the emergency food program; and in-house documents, internal memoranda, published reports, and the like. Data, conclusions, and recommendations of the WFP January 1985 report on logistics and the Deloitte Haskins and Sells October 1985 report on development of accountability systems and other related tasks were reviewed and used in the analysis.

Based on the results of the above-mentioned work, the team then developed preliminary findings that were shared with the USAID Mission Director and staff prior to the team's departure. This two-way interchange with highly experienced, knowledgeable people, either as managers or recipients, plus the team members' own observations added to their cumulative experiences with other drought situations, has been important in formulating the basic elements of this report.

Figure 1. Location of 22 Food Aid National Administration Staging Points for Sorghum Deliveries by Arkel-Talab



□- Arkel Radio Link on Railroad

O- Arkel-Talab Distribution Points

1.3 Setting and Constraints

Sudan is a huge underdeveloped country and ill-equipped to respond to major emergencies of any kind.

Its population is estimated at 21.5 million, possibly more. It is geographically the largest country in Africa--986,000 square miles, or the size of the United States east of the Mississippi. Sudan's literacy rate is 15 percent (25 percent for men and 5 percent for women), which severely limits the supply of trained manpower, particularly in technical fields.

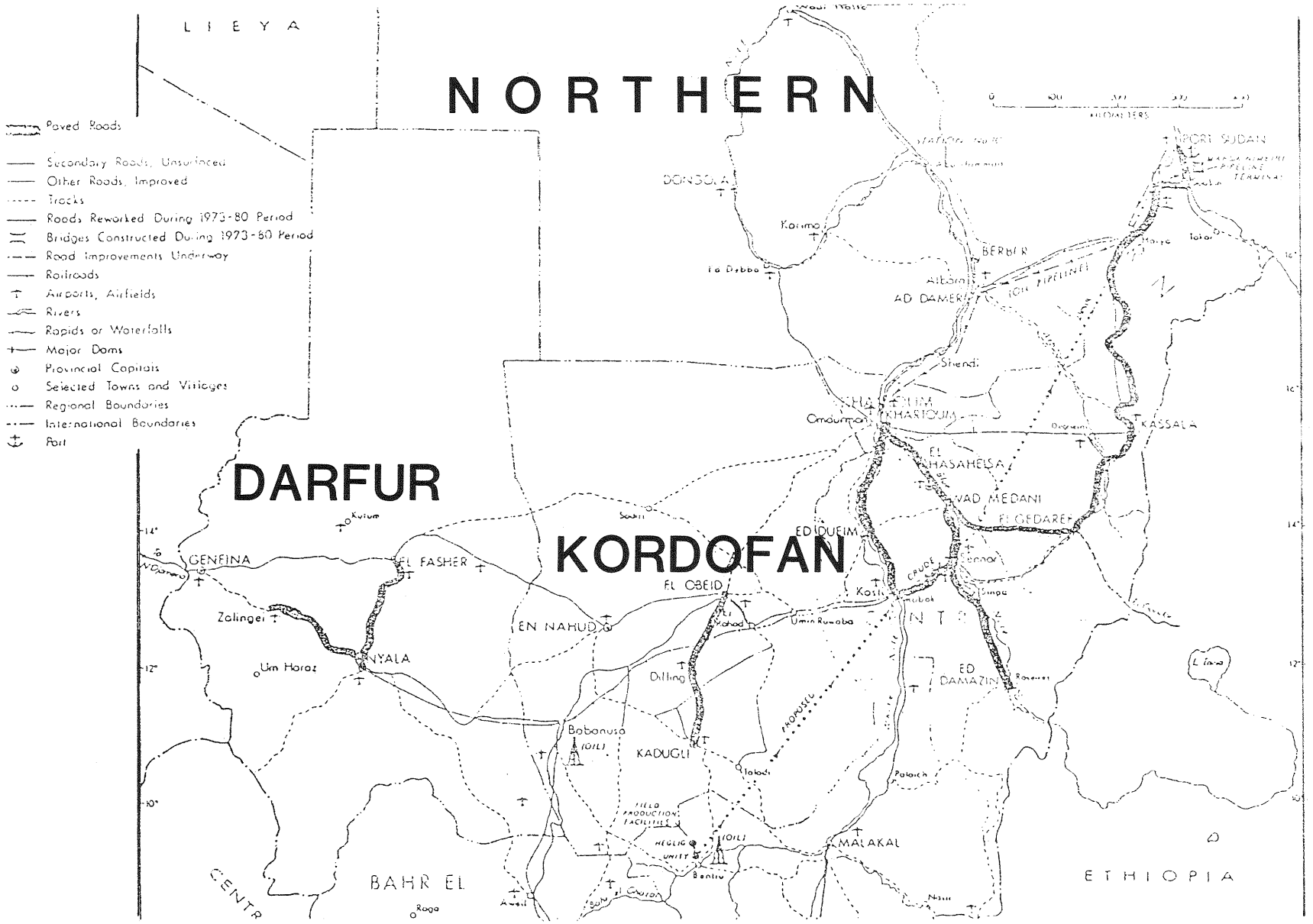
The extremely weak communications and transport systems are major barriers to development and to emergency responses. In all of Sudan, there are only 2,200 kilometers (1,396 miles) of paved road (Washington, D.C., has 1,100 miles). Its system of unpaved roads and marked tracks is about the size of the state of New Jersey. Much of the remaining road network consists of tracks in the dessert and savannah (see Figure 2).

Economically, Sudan could not afford the extended drought-caused emergency that began in 1981. Deeply in debt (about US$ 9.0 billion), it has had an acute shortage of foreign exchange for the last few years, and exports have been declining. Exports were down 50 percent in 1985. Inflation has been about 15 percent annually for the last 4-5 years.

Sudan's climate is difficult, and in many years it leads directly to inadequate food supplies in vulnerable regions of the country. In recent years, the climate has been particularly bad. Because of lack of rainfall, only 1 crop in 10 in the northern part of Sudan has been sufficient to provide an adequate diet for its population. In the past, in Western Sudan's rainfed areas, only 4 out of 10 years provided sufficient rainfall for farmers to grow the crops necessary to feed the region's population. The mean rainfall at Nyala in the Darfur region for 1954-1984 was 377 millimeters (mm); this represented a decrease of 21 percent from the long-term average of 477 mm (Roome/SCF 1985, 2) over the period 1920-1980. Annual rainfall in the northern Darfur and Kordofan areas in the 3 years prior to 1983 averaged only 100 mm and in 1983 was only 75-85 mm. Central and Eastern Sudan are surplus food grain areas in good years; a surplus is expected in 1985/1986, but the exact amount is yet to be determined. Southern Sudan normally has adequate rainfall, but food production is currently disrupted by civil disorders.

Sudan's Government is weak and unstable. This and civil disorders hinder its ability to respond to development and emergency needs. There was a coup d'etat on April 7, 1985. Civil disorders in the south prevent the Government from focusing

Figure 2. Map of Sudan's All-Weather Roads



Source: USAID/Sudan (September 1985).

intently on development matters. The Government's overall financial condition is poor, and regional governments, in particular, have serious cash-flow problems and difficulty meeting their payrolls. Recent decentralization has increased the difficulty of the Central Government's coordination efforts with the regional governments.

2. THE 1984-1985 FOOD EMERGENCY AND A.I.D.'S RESPONSE

2.1 Background

The following points help put the 1984-1985 food emergency in Sudan in context. The 1984/1985 crop year was the fourth year of drought (see Figure 3) that grew in severity each year. In comparison to the 1980-1981 good crop year, 1981-1982 food grain production (sorghum, millet, and wheat) was 63 percent, 1982-1983 production was 57 percent, and 1983-1984 production was only 40 percent. The rural population was particularly vulnerable to the food shortages going into the fourth year of drought.

Sudan in normal years is a food surplus country that exports sorghum. The country had not had a continuing drought of this magnitude for 20 to 25 years. As a result, there were no early warning systems or food emergency preplanning units in place from past drought experience. There was an interministerial committee to coordinate relief, but it was ineffectual because of lack of interest.

The PVOs working in Sudan (CARE, Save the Children Fund, OXFAM, and LICROS) had been involved largely with development activities or refugee relief. Therefore, they had little or no experience with large-scale feeding programs and related logistic problems.

In the 3 years prior to the 1984-1985 drought, annual shipments of PL 480 Title I and III food totaled 175,000 to 300,000 metric tons (MT). These imports of wheat and flour were designed to meet the food deficit in urban areas through sales and to generate counterpart funds for development purposes. These counterpart funds enabled the Government of Sudan to make a substantial contribution to in-country transport costs of delivering Title II sorghum to the rural areas during the 1984-1985 food emergency.

Going into the fourth year of the drought, the food distribution system for urban areas was well established and needed only to cover the shortfall resulting from the loss of the irrigated wheat crop in the 1983/1984 crop year. As a result, there

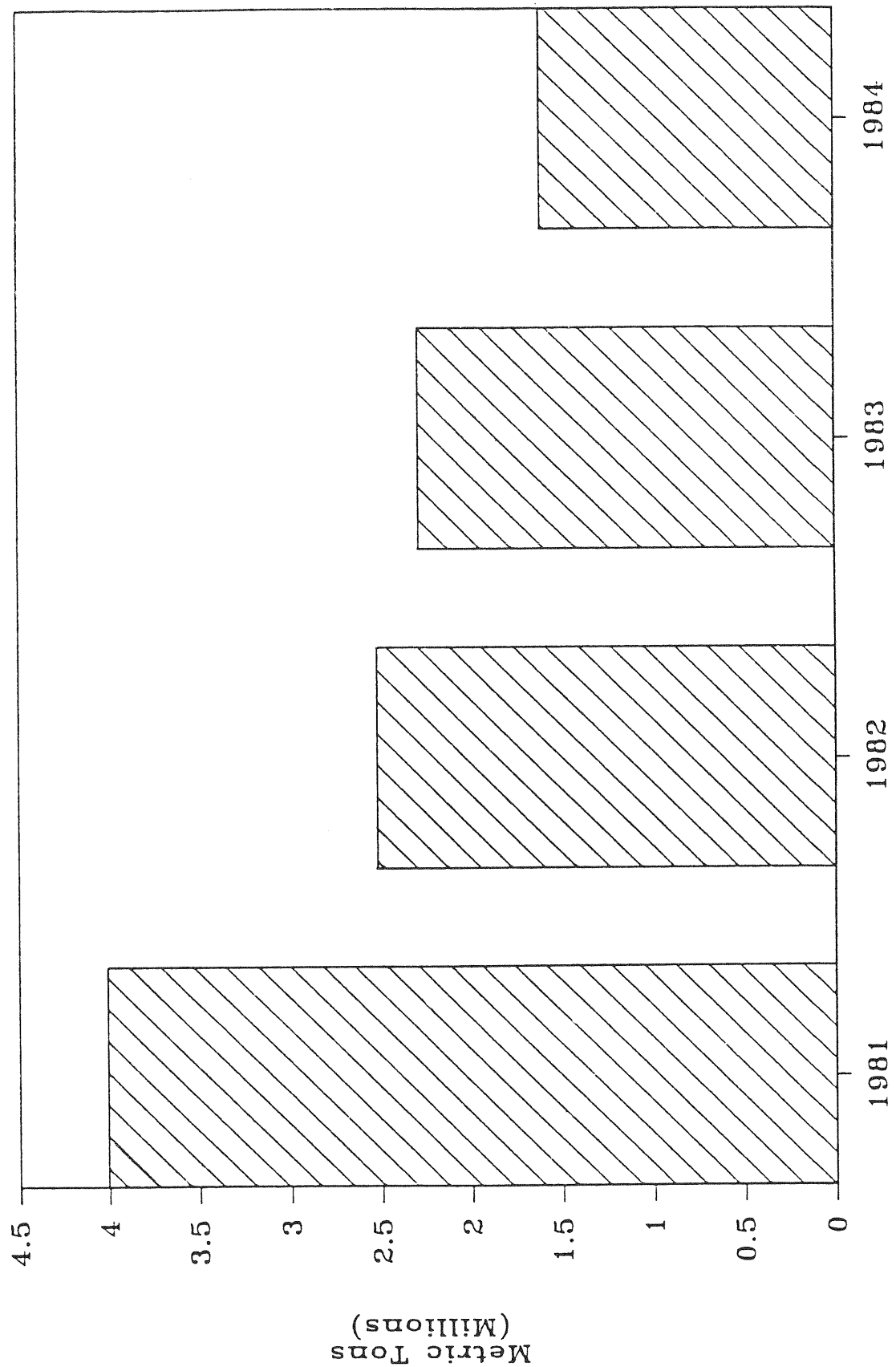


Figure 3. Food Crop Production in Sudan, 1981-1984

were no significant problems in feeding the urban population during 1984-1985.

There were no Title II programs of any magnitude for the rural population prior to the fall of 1984. Earlier Title II programs were mainly directed to refugee feeding programs. As a result, there was no past history of transporting and distributing large amounts of food into Sudan's rural areas, except in refugee camps.

2.2 The Massive U.S. Effort To Feed Those Affected by the Drought

The 1984-1985 emergency food situation in Sudan continued to worsen until a truly massive effort had been undertaken. In March 1984, USAID/Sudan alerted A.I.D./Washington to the emergency food problem. In June 1984, the USAID Mission requested 67,000 MT of Title II emergency food. By March 1985, just 10 months later, the Mission's total requests for emergency food amounted to 837,000 MT--817,000 MT of sorghum for general feeding and 20,000 MT of supplemental feeding food. A.I.D./Washington approvals followed a similar pattern, rising from 82,000 MT in September 1984 to 507,000 MT in April 1985. In addition, A.I.D./Washington approved Title I shipments of 315,000 MT in FY 1985 to meet urban food needs.

In coordination with other donors, the United States took responsibility for the food emergency in the Kordofan and Darfur regions in Western Sudan, where a large portion of the at-risk population was located. USAID/Sudan's goal for its emergency food assistance effort was to supply an adequate ration in a timely manner to all those at risk in their villages. Its strategy was to pre-position food near those at risk prior to the beginning of the June 1985 rainy season, contracting a private sector trucking company (Arkel-Talab), the Sudanese Railroad Corporation, and PVOs (CARE and Save the Children/U.K.) to transport and distribute the food. The Government of Sudan's involvement was limited to providing the contracting mechanism for private sector transport and counterpart funds to finance that transport. At the local level, the relief effort relied on village leaders to allocate food.

The evaluation team's assessment concentrated on Western Sudan (Kordofan and Darfur regions), which was an area of prime U.S. responsibility. Time constraints did not permit examination of A.I.D.'s support for other areas of the Sudan. A.I.D. support in other areas included an emergency feeding program for up to 1.5 million people in Kassala Province of the Eastern Region; assistance to another nearly 2 million people in the Central, Northern, and Red Sea Hills areas through WFP (USAID provided

cereals, some supplementary foods to PVOs, and funding for transport); and food assistance to the Southern regions, which although limited because of the security situation, required considerable coordination. Food was also provided to displaced persons in camps in the Khartoum area through indigenous PVOs. USAID/Sudan worked closely with UNHCR to ensure adequate food supplies for the refugee program. While these programs did not present the same degree of challenge as the Western programs, the team understands that they were successfully implemented and benefited large numbers of Sudanese and refugees.

2.3 Schematic Time-Line of the 1984-1985 Food Emergency and USAID Mission Response

The following chronicles the evolution of Sudan's and USAID/Sudan's response to the 1984-1985 food emergency.

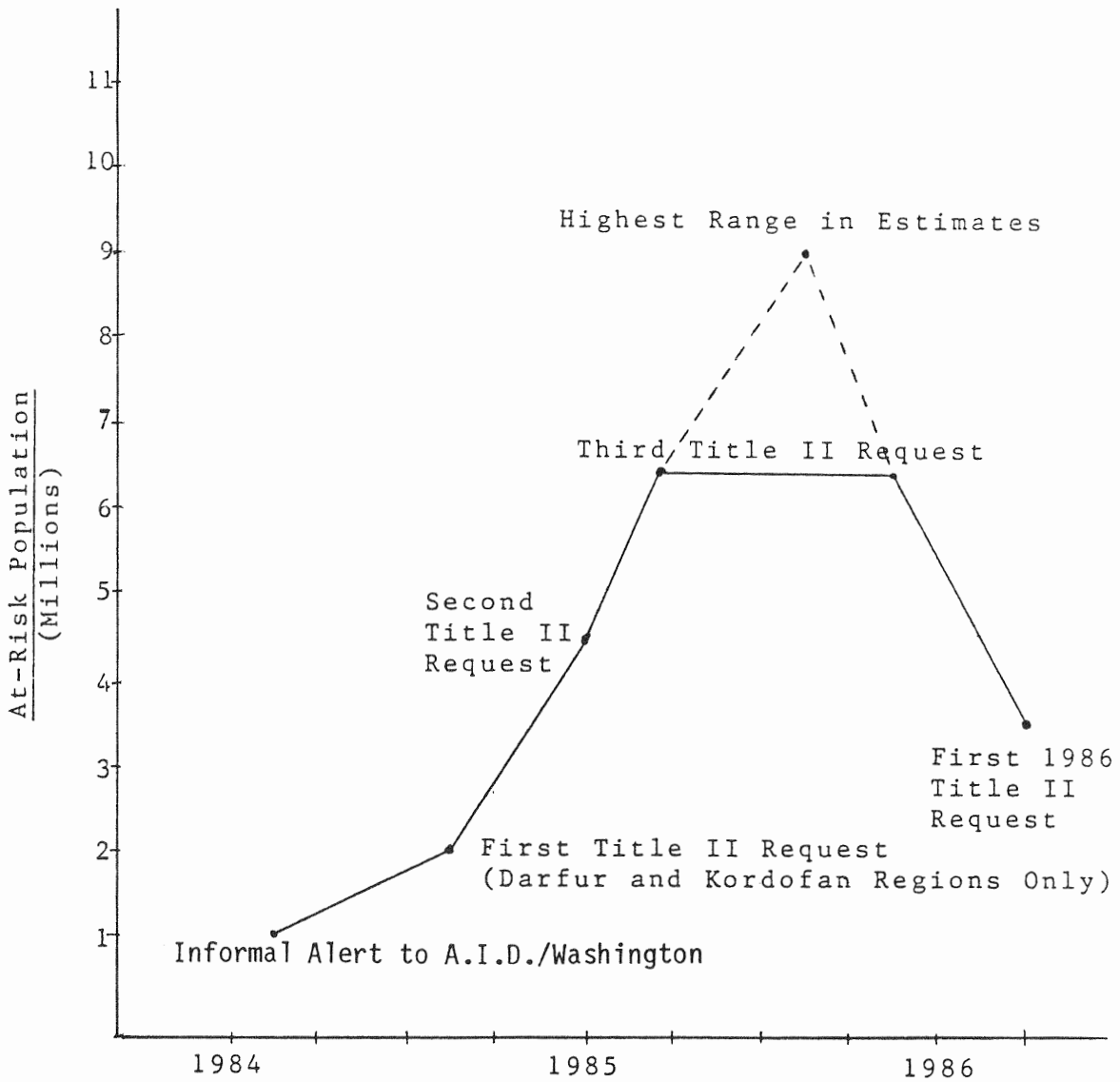
Time-Line: December 1983-November 1985

1983 Dec. When the results of the 1982-1983 crop year became clearer in December 1983/January 1984, the third crop year of the drought, the outlook was bleak. The sorghum crop was only 1.8 million tons (56 percent of the 1980/1981 crop); millet output declined to 54 percent of the 1980-1981 crop; and the wheat crop, which serves the urban areas, was down by about the same amount. Not too much was known about the impact of the preceding 2 years of drought in the rural areas as the third calendar year of the drought began.

1984 Jan. By January 1984, reports began coming in to USAID/Sudan about lack of food in the villages and spontaneous migrations of people from northern Darfur and Kordofan to the south or to urban areas. Because part of the population in this area consisted of nomads or semisedentary people who were normally on the move, it was difficult to determine the seriousness or magnitude of this drought-driven migration.

Mar. In March, USAID/Sudan sent a telegram to A.I.D./Washington alerting appropriate offices of the potential problem. The Darfur and Kordofan regional governments were asking for help. However, the Central Government in Khartoum was reluctant to admit the problem. The Ministry of Agriculture, although informed of drought conditions, did not believe they posed a major problem. USAID/Sudan and PVOs put the at-risk population at 1.0 million (see Figure 4).

Figure 4. Estimated Number of At-Risk Population by PL 480 Request Dates, 1984-1985



Source: USAID Telegrams, 1984-1985.

Apr. April began with increasing reports about the bad conditions of many rural families in northern Darfur and Kordofan. Such reports continued in May.

June In June, USAID requested that A.I.D./Washington provide 67,000 MT of Title II food aid to help farmers in Darfur and Kordofan (see Figure 5). The goal was to provide enough food to sustain the farmers over September-November 1984, until the new crop came in. The amount requested was related more to what USAID/Sudan thought A.I.D./Washington might reasonably be expected to approve than to meeting all of the emergency food needs of the Darfur and Kordofan regions.

July Only after Sudan's President Nimieri visited the Western provinces was a state of emergency declared by the Central Government, and donors were officially asked to help.

USAID/Sudan and A.I.D./Washington continued discussions on the need for a Title II program, with USAID/Sudan insisting that the commodity supplied be sorghum not wheat. Sorghum was preferred because it was a staple grown and eaten by the sedentary rural population.

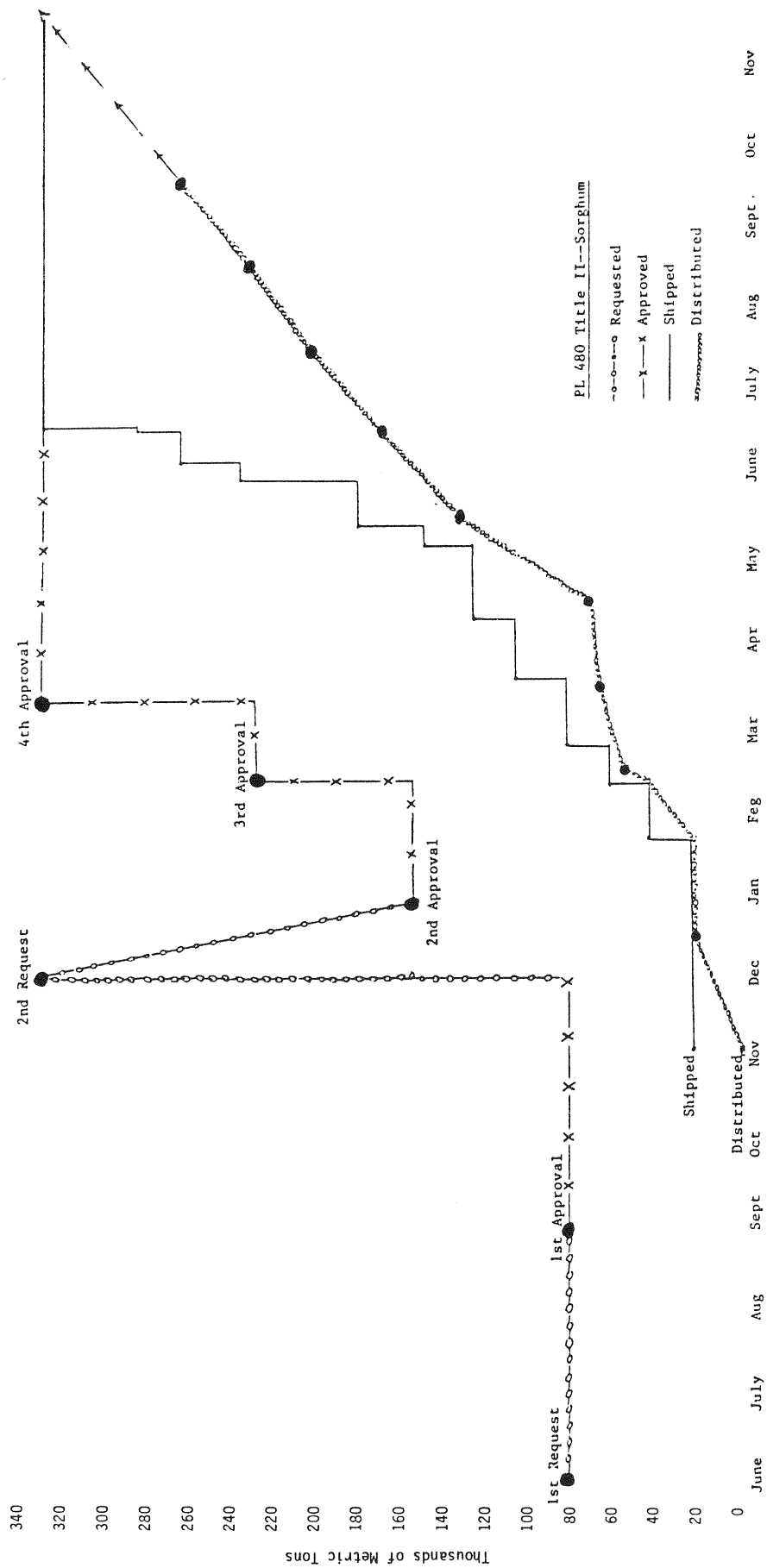
Aug. In early August, the Washington approval process for USAID/Sudan's initial June request for 67,000 MT of sorghum began. By this time, USAID/Sudan's estimate of the at-risk or affected population had risen to 2.0 million people.

Sept. A.I.D./Washington approved USAID/Sudan's first Title II emergency food request for 82,000 MT in mid-September. However, because of the delay in obtaining the approval, the food did not arrive before the 1983-1984 harvest. Although the food arrived too late to meet its intended purpose, it turned out that all 82,000 MT and more was needed in 1984-1985.

Meanwhile, USAID/Sudan began putting in place many of the operational aspects of the Title II program, a process that continued for several months:

- USAID set up a small unit in the General Development Office to implement the emergency food assistance program. The unit reported directly to the USAID Director. Some technical assistance on PL 480 programs, logistic questions, and contracting was obtained from the A.I.D. Regional Economic Development Services Office (REDSO), A.I.D./Washington, and other USAID Missions to help with operational arrangements.

Figure 5. Cumulative Emergency Food Requests, Approvals, Shipments, and Distribution for Darfur and Kordofan Regions, 1984-1985



Source: Data collected by the evaluation team, October 1985.

Sept.

- Financial arrangements were made with the Government of Sudan to allocate necessary counterpart funds (generated from previous A.I.D. programs) to cover port charges and to move food from the port to beneficiaries. The Food Aid National Administration (FANA) in the Ministry of Finance was selected to administer the funds and let contracts for transporting emergency food commodities.

- Port, railroad, and truck transport capacity was assessed. It was decided that the port had the offloading and storage capacity to handle planned shipments and that the railroad had the potential capacity to transport up to 1,200-1,500 tons of food daily. Kosti, in the central region, was the primary staging point for food moving to dropoff points in Kordofan; it was also the center for rail transport to Nyala, the staging point in the Darfur region. From Nyala, trucks transported the food to the 12 district dropoff points (see Figures 1 and 6).

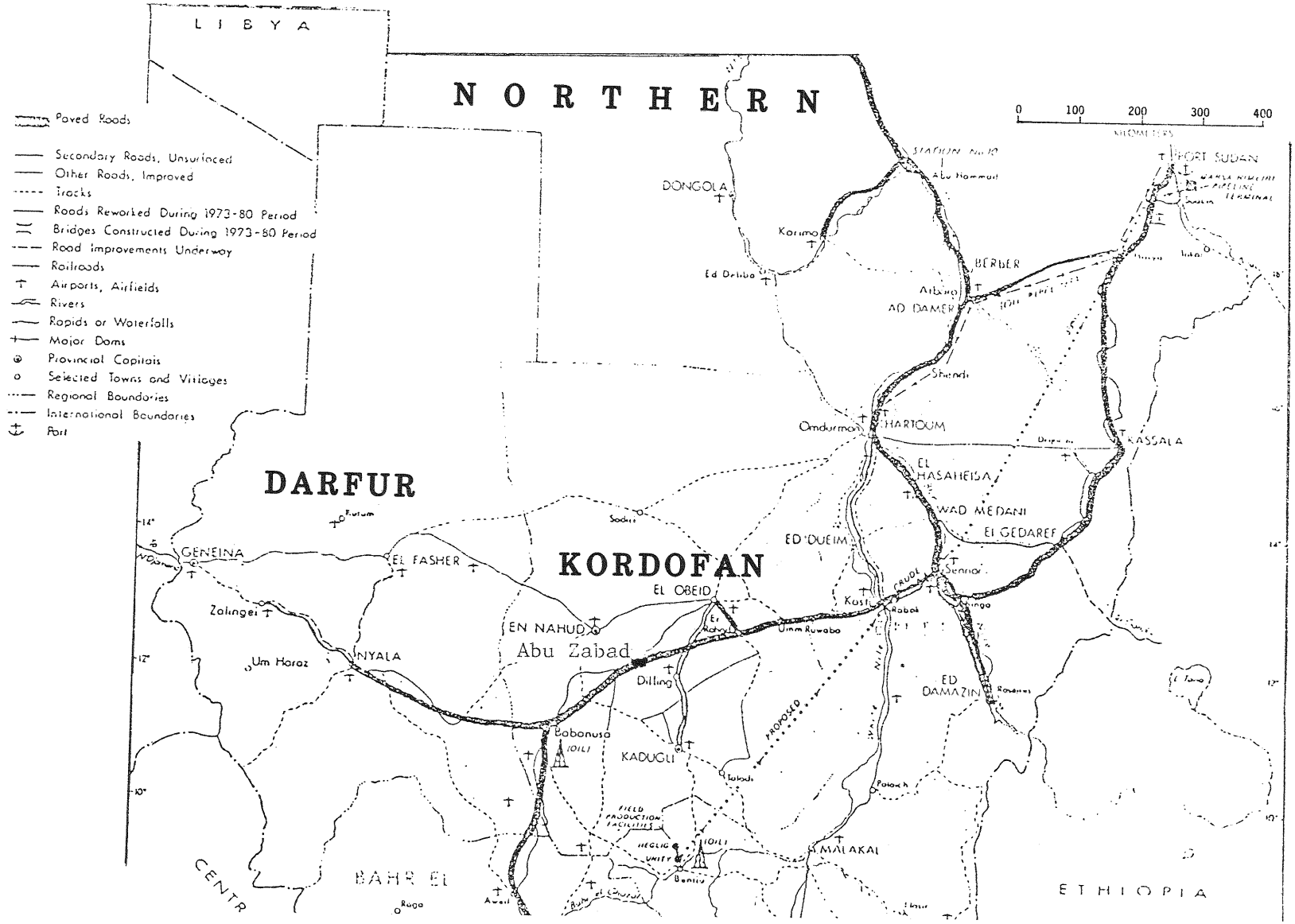
- An American/Sudanese trucking firm (Arkel-Talab) was awarded the contract to deliver the 82,000 MT of Title II sorghum to the 22 dropoff points in Darfur and Kordofan.

- PVOs (principally CARE and Save the Children/U.K.) were asked to arrange for food distribution from the 22 dropoff points to the villages and to monitor the distribution, usually carried out by the village leader or sheik. Grants to PVOs were arranged to cover the costs of gearing up and carrying out the new responsibilities.

Oct. In October, the USAID Director and U.N. Resident Representative continued work on determining what assistance might be expected from the World Food Program (WFP), the European Economic Community, and other bilateral donors, and on how donors would share responsibility for meeting the emergency food requirements.

A general division of labor was agreed on. USAID/Sudan would take responsibility for Western and Northern Sudan, including the Red Sea Hills. The U.N. and other bilateral donors would take Central and Eastern Sudan. (Because of the civil unrest, not much could be done about Southern Sudan, but its food availability was better than in other areas.)

Figure 6. Map of Sudanese Railroad Network



Source: USAID/Sudan (September 1985).

Nov. The first Title II shipment of 20,000 MT of the 82,000 MT approved arrived on November 19, 1984. Arrangements had been for each of the four shipments to arrive 2 weeks apart. Truck transport was used on all but the Kosti-Nyala segments for distributing the food.

Within 2 weeks, most of the 20,000 MT of sorghum had been delivered to the dropoff points; within 19 days it had reached the 22 district storage areas and was immediately distributed by the PVOs. The shipment was enough to feed 2 million people 430 grams of sorghum a day for 23 days.

Dec. The second shipment of 20,000 MT, expected to arrive in early December, was delayed (as were the third and fourth shipments, which arrived in February and March).

The pending 1984 crop failure became more evident. As a result, the position of the rural population in Darfur and Kordofan became increasingly desperate. Total food grain production was only 40 percent of the 1980/1981 crop year level: Sorghum was 40 percent, millet was 52 percent, and wheat was 9 percent.

Surveys by OXFAM, CARE, and Save the Children/U.K. were indicating a rise in the number of people at risk, particularly children.

USAID/Sudan changed its estimate of the at-risk populations. Out of a total population of 6.3 million in the Darfur and Kordofan regions, the at-risk population had risen to 4.2 million, and the seriously at-risk group increased to 2.0 million, or a little less than one-third of the total population of the two regions.

At the end of December, USAID/Sudan submitted its second PL 480 Title II request to A.I.D./Washington for an additional 250,000 MT of sorghum. Together with the 82,000 MT already received, this raised USAID/Sudan's total request to 332,000 MT, or the amount needed to meet the needs of all the seriously at-risk population (2.0 million) in Western Sudan (Darfur and Kordofan regions). (USAID/Sudan decided to ask only for the amount needed for the "seriously at-risk" population rather than the 4.2 million at risk.) The 250,000 MT would provide 430 grams per day for 2.0 million people for 270 days. USAID/Sudan also asked for 7,500 MT of nonfat dry milk and 2,835 MT of vegetable oil for supplemental feeding programs to be run by the PVOs. The goal of supplemental feeding was to target the children and lactating mothers whom surveys had shown to be most at risk and to supply high-protein food to help

Dec. compensate for the nutritional deficiencies caused by delays in food arrival. USAID/Sudan's basic strategy of bypassing the Government bureaucracy, using the Sudan Railroad Company and private sector trucking firms for transport of the food, and depending on PVOs for delivery of the food to the village level and for monitoring the distribution remained the same.

For USAID/Sudan's goal to be achieved, the additional food requested had to be delivered and in place in Western Sudan before the rainy season started at the end of June. Timing was becoming the critical element. Getting enough of the 250,000 MT approved, shipped, and placed in Darfur and Kordofan distribution points before the rainy season (July-September) was not impossible, but it would be very difficult. However, USAID/Sudan now had A.I.D./Washington's fullest support and a high priority throughout the Agency for its food emergency assistance effort.

1985 Jan. On January 11, less than 2 weeks from the receipt of the request, A.I.D./Washington approved 75,000 MT of USAID/Sudan's 250,000 MT request. Unfortunately, the time required to get a supplemental appropriation to cover the increased emergency assistance needs delayed approval of the entire amount. Washington approved the remaining 175,000 MT in January and February respectively, thus delaying shipment to Sudan.

Feb.-Mar. The second 20,000 MT delivery of the first Title II program of 82,000 MT arrived on February 6 (almost 2 months after the first shipment). Truckers were mobilized more effectively in order to distribute the quantity of food aid. The railroad, however, continued to operate sporadically and at a low level. On March 10, the final shipment of the first Title II request of 82,000 MT was delivered to Port Sudan.

Reports of widespread hardship due to the drought were mounting as the fourth year of drought got under way. By early March, USAID/U.N. estimates put the total at-risk population for Sudan at 6.2 million. Earlier it had been hoped that the U.N./WFP/EEC would provide about 300,000 MT of emergency food. By mid-March, a more realistic total was 150,000 MT. Other donor contributions were expected to add another 75,000 MT. This was much less than the 500,000 MT previously estimated.

Concerned that thousands would starve if additional food were not found, USAID/Sudan made its third Title II emergency food request on March 10, 1985. An additional

Feb.-Mar. 500,000 MT of sorghum, plus 7,200 MT of nonfat dry milk and 2,700 MT of vegetable oil for additional supplemental feeding, were requested to feed an additional 1.0 million at-risk people in Western Sudan and 3.0 million in the Central, Eastern, and Northern regions, bringing the total number of people to be assisted to 6.0 million. (As noted earlier, Southern Sudan was not included because of civil unrest.)

Apr. Washington considered this third request fairly promptly; the first tranche of 75,000 MT was approved on March 25, 1985. However, by this time the difficulty of moving food to villages in the interior was becoming clearer, and Washington approved only 175,000 MT of sorghum (in two separate approvals) of the 500,000 MT requested. The supplemental feeding request was also approved in segments, but by June 13, 1985 the additional 7,500 MT of nonfat dry milk and 2,700 MT of vegetable oil was approved by Washington. In part, the A.I.D./Washington decisions to approve requests piecemeal appear to have been related to the availability of funds.

A successful coup d'etat on April 6 created a 6-8 week decision-making hiatus. While new senior officials were being selected, there was uncertainty concerning what direction the new Government would take. No one in the Government of Sudan was prepared to make decisions, sign agreements, contracts, and so on. However, USAID/Sudan continued to negotiate with relevant agencies to try to keep the program moving. Likewise in Washington, few decisions were taken while A.I.D./Washington waited for the dust to settle prior to making any additional commitments.

A permanent Relief and Rehabilitation Commission (RRC) was established by the new Government to replace the old committee. A commissioner was selected (the past head of FANA) to head the RRC, and the Commission's staff was drawn from the relevant ministries to ensure proper liaison among ministries. A close working relationship was established with the U.N. Resident Representative, but the Commission did not play a major role in the U.S. program because FANA remained the food assistance coordinator.

Between April and May, food shipments did not arrive when scheduled. PVO's were experiencing some problems with food distribution:

Apr.

- PVOs (CARE and Save the Children/U.K.) were beginning to receive large food shipments. PVO staff who arranged for shipments and monitored distributions deep in the interior of Sudan had been recruited more for their knowledge of Sudan and language ability than for their expertise in food emergencies or their management ability. Because of the urgency of the situation, there was not much time for training. As a result, the startup of feeding operations did not go as smoothly as it might have had more experienced staff been available. Negotiating with local truckers for transport from the dropoff points to the villages was difficult, particularly as competition for the limited number of trucks available in the rural areas increased. Grants to assist CARE and Save the Children were approved from A.I.D.'s nonfood emergency assistance funds to help these PVOs carry out their mandate. However, A.I.D./Washington did not finalize the grants until August/September--months after the programs began.

- Attempts to get the Sudan Railroad Company to give priority to the movement of food over sugar were unsuccessful; alternate arrangements were made for trucks to pick up as much of the slack as possible.

- Arkel-Talab was awarded its second contract to move the 250,000 MT of sorghum and supplemental feeding foods. The contract was not approved until late April, primarily because of the hiatus in decision-making caused by the change of government. The new Government of Sudan was reluctant to acquiesce in the selection of Arkel-Talab for the second transport contract, preferring to spread the work among several local companies.

At the end of April, about 67,000 MT of sorghum had been delivered to the dropoff points and from there to the villages for distribution. This represented about 16 percent of the total amount of Title II sorghum approved for Western Sudan, or enough to feed the at-risk population for 11 weeks.

May

By May, all of the original 82,000 MT of sorghum had been delivered to the 22 district dropoff points, and the food aid was beginning to move through the system to the villages. By now, most people in Western Sudan did not have adequate supplies of food to meet their needs. In general even less food than planned was delivered to those in harder to reach areas.

June — The first rains came in June, earlier than expected. They caused some disruption of food transport, but they were not immediately catastrophic.

Within 2 weeks, over 22 ships carrying sorghum and other goods from the donor countries arrived. This caused serious berthing problems for the Port Authority. However, by careful scheduling and by giving priority to food, no ship had more than 3 days of demurrage charges, and most ships were able to discharge within the time frame imposed by their shipping contract.

Adequate food was now in-country. Distributing it to the difficult-to-reach areas of Darfur and Kordofan became the problem.

July — In July, heavy rains began, which hampered both railroad and road transport.

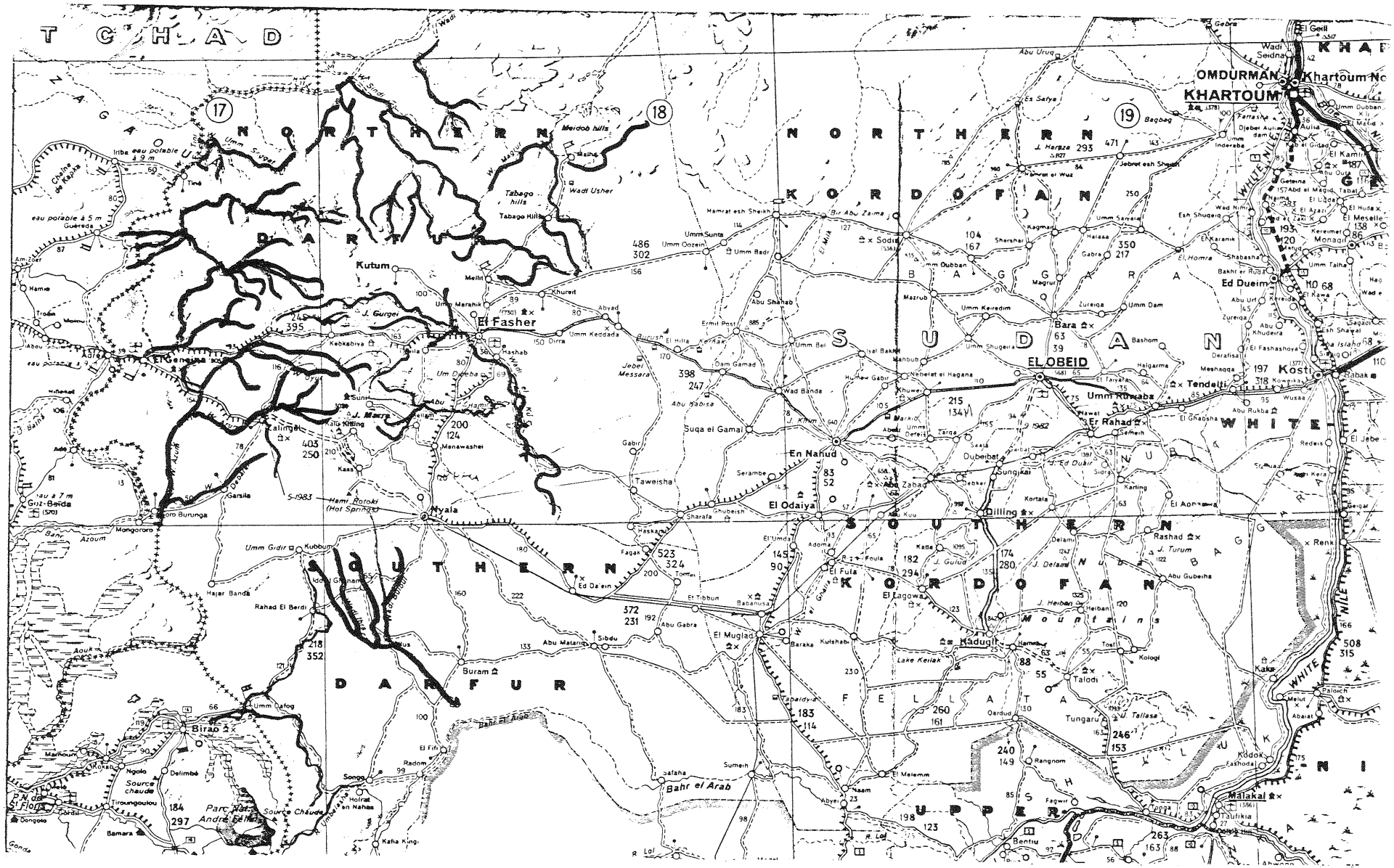
Rail transport was also hampered by lack of locomotives and frequent washouts of the link between Kosti and Nyala. USAID/Sudan ordered 10 locomotives and signed a contract with Arkel-Talab to provide maintenance support to the railroad. The Mission also had contracts with two other private firms for railroad maintenance.

It became increasingly difficult to supply the major staging areas of Nyala and El Fasher with food. Arkel-Talab was continuing to deliver food during the rainy season, but mainly to easily reached dropoff points less affected by the rain. In April, Arkel-Talab was transporting large quantities of food to Darfur (Nyala and El Fasher), even weeks before a contract was signed. The Arkel contract, it was discovered, allowed Arkel-Talab to deliver food to various dropoff points at the rate and time of its own choosing, as long as all deliveries were made by the end of the contract date.

Aug. — In August, the cost of renting trucks increased significantly, primarily because they encountered more and more delays in trying to cross the wadis (dry river beds), which were now filled with water (see Figure 7). (One group of trucks was trapped between two water-swollen wadis for 21 days waiting for the water level to go down.)

The 10 General Electric locomotives ordered earlier--using nonfood emergency assistance funds (US$8.0 million)--were delivered to the Sudan Railroad Company along with spare parts. They were immediately put in service to enable the railroad to carry more food.

Figure 7. Map of Major Rain-Swollen Dry River Beds (wadis) in Northern and Southern Darfur Regions, 1984-1985



Source: USAID/Sudan (September 1985).

Aug. The serious plight of those in the remotest areas was becoming increasingly apparent as the summer wore on. Truck and rail transport was unable to bring food to many starving families. As a result, A.I.D. contracted for three helicopters and one support aircraft (C-130) for use in relief efforts for the hardest hit areas in Western Sudan that were inaccessible by other forms of transportation. The helicopters became operational in mid-August, and their role in getting food to hard-hit isolated villages was significant.

At this point, the priority of U.S. policy was to make every effort to save the maximum number of people throughout the country and to try to persuade farm families to remain in their villages so that they would be able to plant food grains now that the rains had come. Although the cost of using helicopters appeared extravagant the expenditure was justifiable.

USAID/Sudan and the Government of Sudan agreed on a release of counterpart funds to buy seeds for farmers to plant now that the rains had arrived. All seed for the emergency program was purchased locally. Some farmers planted U.S. sorghum, which had not been pretested and was a hybrid variety.

The European Economic Community (EEC) sent resident staff to Khartoum to expedite its assistance contribution. EEC transported small vehicles to service El Geneina Town. Trucks provided by EEC were not used during the 1985 program.

Trucks that had been contributed by the Italian Government, the EEC, and Band-Aid, began to arrive.

Fuel became a major problem, and generally speaking, was not available in the regional and district capitals of Darfur and Kordofan regions. The EEC planes and the U.S.-support C-130 plane helped by transporting fuel to the needed areas.

CARE and Save the Children received the first shipments of food for supplemental feeding (nonfat dry milk and vegetable oil) and began to train staff to carry out "wet" (gruel) feeding programs. Some dry feeding programs also were undertaken. It would take several months for these supplemental programs to become fully operational.

USAID had its staff in the field starting in December 1984. Four additional staff were added in August 1985: one person for Port Sudan, one person to cover Eastern

Aug. and Central regions, one person for Kordofan and Darfur regions, and one person for administrative support. Their role was to monitor operations in these areas, add to the USAID/Sudan's supervisory capability, and strengthen reporting.

The U.N. Office of Emergency Operations/Sudan (UNEOS) had mobilized an impressive staff drawn from its other agencies (e.g., WFP, UNICEF, WHO, and FAO). UNEOS helped the RRC create an early warning system and a disaster planning unit. The WFP was running a transportation coordination unit. UNICEF and WHO were working on health programs.

UNEOS had also been hosting joint donor meetings to exchange information on the existing emergency food program and the future (see Table 1).

Sept. By the end of the rainy season in late September, the 332,000 MT of sorghum in USAID/Sudan's first and second Title II requests had arrived in Sudan. Most of the food in USAID/Sudan's third Title II request also had arrived.

It was again possible for trucks to get into outlying areas and deliver the food to severely impacted villages.

Oct. In October the evaluation team arrived in Khartoum for a 2 1/2-week stay. One team member visited 11 villages and 171 beneficiaries in the remote areas of the Darfur and Kordofan regions. Title II food was found in all of the homes visited. Although the amounts were limited, they were essential supplements to famine food eaten by the rural population in those areas. A refugee camp on the Chadian border was also visited. This direct contact with beneficiaries in the most severely affected areas was possible only because of the air lift and helicopters made available by USAID/Sudan. The team used chartered aircraft to visit a supplemental feeding program 70 kilometers (km) from El Obeid; the supplemental feeding program here used four-wheel drive vehicles furnished by CARE.

The team used USAID/Sudan and EEC airlifts to visit Port Sudan and the staging areas of Nyala and El Fasher in order to examine the logistic aspects of the food aid efforts.

In Khartoum, the team met with managers of the emergency food program from the Government of Sudan, UNEOS, WFP, UNICEF, PVOs (CARE, SCF/U.K., OXFAM), and Arkel-Talab.

Table 1. Donor Pledges and Arrivals of Food as of October 3, 1985
(metric tons)

Donor	Drought Committed	Drought Arrived	Refugee Committed	Refugee Arrived	Market Committed	Market Arrived	Total Committed	Total Arrived
WFP	63,695	62,744	57,025	56,961			120,720	119,705
EEC	38,685	38,501	30,835	25,041	11,350	10,950	81,870	74,492
United States	590,733	560,796	10,000	10,000	319,039	319,029	919,772	889,825
United Kingdom	17,000	16,876	1,079	1,076	21,602	21,602	39,681	39,554
Canada	25,450	450	5,080	5,151	28,000	28,148	58,530	33,749
Japan	2,812	2,812	200	100	12,652	12,660	15,664	15,572
China	0	0	0	0	3,000	3,000	3,000	3,000
Belgium	0	0	8,081	7,369	3,000	2,927	11,081	10,296
Germany	3,580	2,481	17,013	16,902	6,750	6,750	27,343	26,133
Denmark	0	0	0	0	5,000	5,000	5,000	5,000
Italy	60	60	1,386	1,378	12,000	12,000	13,446	13,438
Netherlands	5,373	373	568	568	0	0	5,941	941
North Yemen	300	300	0	0	0	0	300	300
New Zealand	0	0	356	356	0	0	356	356
Oman	0	0	600	600	0	0	600	600
Libya	315	314	0	0	0	0	315	314
Norway	40	40	0	0	0	0	40	40
France	0	0	2,190	2,190	7,300	7,300	9,490	9,490
Pakistan	0	0	0	0	3,000	3,000	3,000	3,000
Australia	25	25	0	0	0	0	25	25
LICROS	12,663	12,595	0	0	0	0	12,663	12,595
Band Aid	1,834	1,789	1,078	1,078	0	0	2,912	2,867
Oxfam	642	642	761	761	0	0	1,403	1,403
SCF/U.K.	3,235	3,030	55	55	0	0	3,290	3,085
CARE-USA	0	0	1,662	1,662	0	0	1,662	1,662
Medical Vol. Int'l.	279	279	0	0	0	0	279	279
Yomiuri Shimbun-Japan	0	0	47	47	0	0	47	47
Kamikawa Farmers-Japan	0	0	7	7	0	0	7	7
Swedish Church Relief	0	0	90	90	0	0	90	90
Kuwait Relief Commit.	9,250	7,412	0	0	0	0	9,250	7,412
Saudi Red Crescent	24,483	24,483	0	0	0	0	24,483	24,483
UAE Relief	1,663	1,663	0	0	0	0	1,663	1,663
Iran Red Crescent	59	59	0	0	0	0	59	59
Total	803,176	737,724	138,113	131,392	432,693	432,366	1,373,982	1,301,482
Percentage		92%		95%		99%+		95%

Source: U.N. Office of Emergency Operations in Africa (1985).

Oct. October agricultural surveys by USAID/Sudan, the Government of Sudan, the World Bank, and FAO were reporting prospects for a bumper crop of sorghum in November/December; crop estimates were 2.7 million MT (USAID), 2.9 million MT (World Bank), and 3.7-5.0 million MT (Government of Sudan). The FAO estimate was near the lower range of the Government of Sudan's estimate.

By October, PVOs were reporting that the rains had been uneven. Some areas would have no crop while crops in other areas would be greatly reduced because of lack of late-season rains. Therefore, the at-risk population was estimated at 2.0 to 3.0 million. Substantial emergency food assistance would be required in 1985-1986: 400,000 MT of sorghum and additional supplemental feeding foods.

Most agreed that there would be a surplus of sorghum. Thus, some of the 400,000 MT of emergency food assistance needed could potentially be purchased locally to help support the price of domestic sorghum, particularly in Eastern Sudan. However, the amount that could be purchased was unclear. Assuming purchases of 442,000 MT, the cost of purchases and transport of food from Eastern Sudan to villages in northern Darfur and northern Kordofan and other parts of the country was estimated between US$160 and US$180 million.

Nov. Remote-sensing data, satellite pictures, and on the ground observations were used to determine the size of the sorghum and other food crops. However, this information would not be available until late December/early January.

A.I.D./Washington and USAID/Sudan decided that in 1985-1986 the United States should not undertake the dominant management role nor serve as the principal supplier of food and funding. Thus, its strategy was for a considerably lower USAID Mission profile in 1986, with the leadership role for food emergency assistance being passed to the United Nations. Because of continuing concerns about the still limited capabilities of the Government of Sudan to handle the emergency effort, the United States and the U.N. Emergency Office/Sudan (UNEOS) in New York agreed that the United Nations would play the major coordinating role and that PVOs would be responsible for receipt, transport, and distribution of the 1986 sorghum. The U.S. contribution of food, financing, and technical assistance would not exceed 50 percent of the total.

Nov. To implement this strategy, USAID/Sudan recommended that 100,000 MT of U.S. Title II sorghum, presently at Port Sudan, be turned over to UNEOS and that funds be obtained to enable UNEOS to distribute the food. The local UNEOS office and WFP had stated earlier that they were willing to take this responsibility, but they also stressed that the U.N. would have to find the funding for this new role in 1986.

USAID/Sudan also proposed that the U.S. food contributions for targeted groups be given directly to U.S. PVOs active in the Sudan and to Save the Children/U.K. The PVOs would be directly responsible for distributing the food to the villages. Funds for distribution would be furnished from U.S. dollar sources. Specific requests for Title II assistance to major PVOs were sent to A.I.D./Washington. At the end of November, A.I.D./Washington was evaluating these proposals.

3. EVALUATION RESULTS: FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Overall the accomplishments of USAID/Sudan's and A.I.D./Washington's 1984-1985 emergency food assistance effort were substantial. Given the circumstances, the performance of this massive program was impressive. Over 900,000 MT of Title I and II food grains (wheat and sorghum) were shipped to Sudan and distributed among its urban and rural population. Combined with other donor food shipments, over 1 million MT of food reached Sudan and its at-risk populations. A complex series of logistic, social, and political hurdles were overcome, and the lives of many farm families in rural areas were saved.

Despite these positive results, A.I.D. did not fully achieve its goal in terms of the quantity of food distributed, timeliness, or appropriateness. Thus, there is room for improvement in implementing emergency food assistance in Sudan. The evaluation results related to the needed improvements are presented here under the broad headings of timeliness, management, impact, planning, and 1986 emergency food assistance strategy.

3.1 Timeliness

Timeliness was the critical factor in the 1984-1985 emergency food assistance program for Sudan. Although overall, the USAID/Sudan and A.I.D./Washington record is impressive and the three separate requests for Title II emergency assistance in 1984-1985 were increasingly handled more expeditiously by A.I.D./

Washington, it is important to understand that important targets were missed, which resulted in hardship and added expense for the program.

3.1.1 Findings

1. The first Title II request for sorghum did not achieve its initial objective, which was to provide food to farmers during the months of September-November 1984. The first shipment of sorghum arrived in late November, after the 1984 crop was harvested.

2. The food from the first Title II request was still urgently needed in 1985 because of the major failure of the sorghum and millet crops in 1984 (see Table 2).

Table 2. Production Data for Sudanese Food Crops, 1981-1984 (metric tons)

Crop	1981	1982	1983	1984
Sorghum	3,277	2,000	1,819	1,300
Millet	573	341	314	300
Wheat	163	180	162	15

Source: USAID/Sudan telegram (December 27, 1984).

3. Shipments of the first Title II request of 82,000 MT were badly scheduled with a 2-month gap between the first and second shipment (see Table 3). USAID/Sudan, worried about port congestion, asked A.I.D./Washington to delay the arrival of the second 20,000 MT shipment. However, 4-6 weeks passed before new schedules could be worked out, which added to the delays. Overall, the first Title II request for sorghum took about 9 months from the date of USAID/Sudan's request in the summer of 1984 until all of the requested food arrived in Sudan. The 82,000 MT approved was to help the at-risk population of 2.0 million in western Sudan during the difficult period just before the 1984 harvest (September-November 1984). The first ship arrived in November 1984 and the last in March 1985. Although food assistance was still very much needed in 1985 because of the loss of the 1984 crop, the delays kept the food from reaching

some of the at-risk population in the difficult period before the harvest--the Mission's original objective.

4. The bulk of the 250,000 MT of sorghum requested under the second Title II request did not arrive in time for distribution to remote areas prior to the rainy season. Thus USAID/Sudan had to move large quantities of food during the rainy season, which was extremely difficult and resulted in serious delays and shortfalls in getting food to needy people. Unable to implement its original strategy because of the rains, USAID/Sudan had to adopt a new one: to maximize, by using all means available, the movement of food to as many of the needy in Western Sudan as possible. Unfortunately, throughout the remainder of the 1984-1985 period, this initial delay required critical changes in USAID/Sudan and A.I.D./Washington's decisions and activities and adversely affected the success of their program.

5. Failure to pre-position the sorghum prior to the rains, significantly increased the distribution costs because trucking rates doubled and sometimes quadrupled.

6. Helicopters and support aircraft had to be brought in to service areas that were inaccessible by truck. Although it only took A.I.D./Washington 10 days to approve the second Title II request (made in December 1984) for 250,000 MT of sorghum for Darfur and Kordofan, there were implementation delays and the last ship did not arrive at Port Sudan until July 1985, 7 months after the request.

An important component of the request was USAID/Sudan's insistence that most of the food arrive in Sudan by April to ensure pre-positioning of the food in the hard-to-reach areas in Darfur and Kordofan prior to the rainy season, which began in June. Only 45,000 MT arrived in April; most of the remainder arrived at the end of May and early June, too late to be distributed prior to the rainy season.

7. The third Title II request moved rapidly through the system. Only 3 months from the date of USAID/Sudan's submitted request, 175,000 MT of the 500,000 MT sorghum requested had arrived at Port Sudan. The 175,000 MT of sorghum arrived on August 10, requiring one-third the delivery time of the 82,000 MT shipment under the first request.

8. A.I.D.'s long request-approval-shipment cycle did shorten the 1984-1985 period, but it still took nearly 12 months from the time of each USAID/Sudan request to full distribution of the approved emergency food in Sudan (see Figure 5 and Table 3). This stemmed, in part, from the need to program increasingly more food to meet the expanding need. However, the delay was also the result of the involved process of funding, approving, and shipping food; lack of adequate staff at USAID/Sudan; and the lack of

Table 3. Projected Arrivals for PL 480 Title II Commodities

Vessel Name	Commodity	Consigned To[a]	Quantity (MT)	Est. Arrival
Comanche	Sorghum Blk	G/G	20,910	11/19/84
Al Karim	Sorghum Blk	G/G	20,500	2/06/85
Sugar Islander	Sorghum Blk	G/G	20,500	2/26/85
O/Seas Marilyn	Sorghum Blk	G/G	20,500	3/11/85
Subtotal Tranche 1			82,410	
Anastasia	Nonfat Dry Milk	G/G	1,000	4/01/85
Spirit of Liberty	Sorghum Blk	G/G	25,000	4/03/85
Polyxeni	Sorghum Blk	G/G	20,000	4/24/85
King	Sorghum Blk	G/G	25,000	5/19/85
Oromonte	Nonfat Dry Milk	G/G	1,500	5/22/85
Delta Mar	Nonfat Dry Milk	WFP	1,000	5/26/85
Falcon Princess	Sorghum Blk	G/G	30,000	5/26/85
Kenya	Bulgur	CRS	239	5/85/85
Tramountana	Sorghum Bag	G/G	25,000	6/12/85
Golden Endeavor	Sorghum Blk	G/G	50,000	6/12/85
Jewon	Sorghum Blk	G/G	30,000	6/18/85
Michalis	Veg. Oil	G/G	945	6/18/85
Green Harbour	Flour Bagged	G/G	20,204	6/30/85
Green Harbour	Corn-Soya Milk	G/G	3,000	6/30/85
Balder Z Dawn	Nonfat Dry Milk	WFP	246	6/85/85
Bennington	Sorghum Blk	G/G	47,500	7/02/85
Subtotal Tranche 2			280,634	
Vardass	Sorghum Blk	G/G	47,492	7/02/85
Spirit of Liberty	Sorghum Blk	G/G	37,300	7/02/85
Neches	Sorghum Blk	G/G	35,000	7/02/85
Popi P	Veg. Oil	G/G	953	7/11/85
Baltic Transporter	Sorghum Blk	G/G	15,000	7/26/85
Baltic Transporter	Sorghum Blk	G/G	2,500	7/26/85
Cape Kennedy	Veg. Oil	G/G	937	7/27/85

Table 3. Projected Arrivals for PL 480 Title II Commodities (cont.)

Vessel Name	Commodity	Consigned To[a]	Quantity (MT)	Est. Arrival
Sam Houston	Veg. Oil	G/G	3,461	7/27/85
Delta Mar	Nonfat Dry Milk	G/G	3,257	7/30/85
Kenya	Bulgur	CRS	290	7/85/85
Stonewall Jackson	Flour Bagged	G/G	4,796	7/85/85
Nadelhorn	Sorghum Blk	G/G	14,000	8/06/85
Nadelhorn	Nonfat Dry Milk	G/G	1,748	8/06/85
Cape Star	Sorghum Blk	G/G	40,003	8/10/85
Robert E. Lee	Corn-Soya Milk	G/G	1,542	8/15/85
Robert E. Lee	Nonfat Dry Milk	G/G	205	8/15/85
Robert E. Lee	Veg. Oil	G/G	2,722	8/15/85
Green Harbour	Corn-Soya Milk	G/G	2,087	8/20/85
Green Harbour	Veg. Oil	G/G	987	8/20/85
Green Harbour	Veg. Oil	G/G	2,034	8/20/85
	Sorghum Blk	G/G	2,500	8/00/85
Vanil V.1	Veg. Oil	G/G	584	9/01/85
Delta Mar	Beans	G/G	1,347	9/20/85
Delta Mar	Corn-Soya Milk	G/G	145	9/20/85
American Calif.	Veg. Oil	G/G	936	10/02/85
Shirley Likes	Veg. Oil	G/G	400	10/15/85
Shirley Likes	Corn-Soya Milk	G/G	4,763	10/15/85
Shirley Likes	Beans	G/G	4,082	10/15/85
Virginia	Beans	G/G	570	10/15/85
American N. Jersey	Corn-Soya Milk	G/G	1,928	
American Virginia	Corn-Soya Milk	G/G	25	
	Nonfat Dry Milk	G/G	1,156	
Subtotal Tranche 3			234,750	
Total			597,794	

[a]G/G = government-to-government.

Source: USAID/Sudan General Development Office, August 19, 1985.

preplanning and contingency planning for distribution once the original strategy was abandoned and food had to be distributed during the rainy season.

9. One of the difficulties for A.I.D. and other donors was the lack of adequate data concerning the size of the at-risk population and the harvest. Estimated food needs were volatile. Estimates of the number of people needing assistance went from 1.0 million persons in the Darfur and Kordofan regions in June of 1984 to 2.0 million in September 1984 (see Figure 4). By the end of 1984, the total affected population in these two regions was put at 4.0 million out of a total population of over 6.0 million.

Information on the size of the harvest was not available; crop data were extremely limited. There were no preplanning studies, particularly longitudinal socio-anthropological baseline studies that would have permitted informed judgments to be made on the movements of nomads and of sedentary populations in search of food.

10. Although USAID/Sudan began to develop various planning documents in 1984, predisaster units do not seem to have been established, even after 3 years of drought. However, the Dutch surveyed port and road capacities both in early 1984 and again in 1985.

11. The Government of Sudan was preoccupied with economic and political problems. FANA was, and continues to be, the permanent Government of Sudan agency for handling food aid. Until May 1985, when the new Government set up the Relief and Rehabilitation Commission (RRC), the Government had no overall permanent food emergency structure. The RRC limited staff and resources with which to handle the surge of administrative and operational matters caused by the emergency.

12. Mobilization of donors other than the United States was ineffective. A.I.D. usually filled the food, finance, and management gaps when other donors could not complete their tasks. But often action could be taken only well after others had missed their schedule, thus creating further delays.

In the end, the United States financed 80 to 85 percent of the total cost of the food emergency assistance for Sudan. At one point, projections of U.N., WFP, and EEC contributions were around 170,000 MT; total contributions by other donors were expected to be about 400,000 MT. In fact, total contributions from other donors did not exceed 200,000 MT. The U.N. was slow to react and did not establish its U.N. Emergency Office in the Sudan (UNEOS) until June 1985.

3.1.2 Conclusions

1. The lack of timeliness directly reduced the desired program impact. Less food than needed was distributed when it was most needed, even less food got to those in inaccessible areas, and supplemental feeding programs were delayed by lack of funding and late arrivals of commodities.

2. The timeliness of A.I.D.'s emergency food assistance in Sudan can be improved. For example, pre-positioning the food prior to the rainy season will improve performance even if nothing else is done. Preplanning, development, and implementation of an action plan for all participants and more effective donor coordination (especially between the United States and the United Nations) are also necessary for such improvement.

3. More could have been done to improve equity by ensuring food delivery to remote villages. For example, the contract with the private trucking firm could have been more tightly drawn.

4. Damaging delays resulted from the approval and shipping process on USAID/Sudan's first and second requests but not on the third (see Table 4). The first request was delayed because A.I.D./Washington took several months to approve the request and the shipping schedule was flawed; the second request was approved rapidly but was delayed because of lack of funds. The third request was not delayed. The supplemental appropriation for food was approved in late March, and funds were available. Previous A.I.D./Washington procedural and administrative questions had been resolved, and the President and the A.I.D. Administrator had accorded top priority to the emergency feeding program in Sudan.

5. A.I.D./Washington, under the proper circumstances, can move rapidly and respond in a timely manner.

3.1.3 Recommendations

1. A time-phased action plan laying out the critical path for the 1986 emergency food assistance program should be prepared as soon as possible.

2. Training efforts by UNEOS and RRC to support establishment of an early warning system and predisaster planning unit in the Government of Sudan should be carefully monitored and supported with funds and technical assistance.

3. Baseline social/economic studies should be undertaken now to provide a better data base for decision-makers in the future.

Table 4. Food Request and Approval Dates for the Title II Emergency Food Assistance Program in Sudan, 1984-1985 (in metric tons)

Commodity	Quantity Requested by USAID	Request Date	Quantity Approved by A.I.D./ Washington	Approval Date
Sorghum	77,000	6/01/84	82,000	9/14/84
Sorghum	250,000	12/17/84	75,000	1/11/85
		12/17/84	75,000	2/28/85
		12/17/84	100,000	3/25/85
Sorghum	500,000	3/11/85	100,000	3/25/85
			75,000	4/04/85
Sorghum	20,000		20,000[a]	2/28/85
Wheat	25,000		25,000[a]	2/01/85
	872,000		552,000	
Supplemental Feeding Foods[b]	45,000	12/27/84	42,825	1/16-6/13/85
Total	917,000		594,825	

Note: A.I.D./Washington approved 552,000 MT, or 65 percent of the total requested by USAID/Sudan, including food for supplemental feeding programs.

[a]Released from Refugee Feeding Program Stocks.

[b]In general, supplemental feeding programs started in August 1985.

Sources: USAID/Sudan records; A.I.D./Washington telegrams.

4. The Government of Sudan, the U.N., EEC, and bilateral donors should be reminded of the cost of not providing assistance before the rainy season and of the need to take timely action.

3.2 Management

Management was an important determinant of the degree of success realized by the emergency food assistance program. Food and other kinds of emergencies are unplanned and create complex, chaotic situations that require flexibility and the willingness to take quick, decisive action. Good management practices and experienced personnel are particularly important to a successful response to an emergency.

Thus, effective, experienced management was a prime consideration for the Sudan emergency food assistance program, which involved millions of people, millions of dollars, thousands of tons of food, heavy and light equipment, and liaison and coordination at all levels of government and with many donors (bilateral and multilateral). The program was carried out under pressure and in a crisis atmosphere, which demanded excellent management and a management staff with broad experience and knowledge of many disciplines (e.g., planning, finance, agriculture, public health/nutrition, economics, social/anthropology, logistics, and public administration. However, in Sudan, the core unit of full-time contract and direct-hire staff responsible for planning, designing, implementing, and monitoring the US$200 million 1984-1985 emergency food program rarely exceeded four or five persons. Not until the summer of 1985 was the staff expanded to include field monitors and headquarters staff as described below.

3.2.1 Findings

1. To manage the emergency assistance program, USAID/Sudan formed a small unit in its General Development Office, drawing on existing personnel from the Mission, who had no special skills in the management of emergency programs. This management strategy is counter to the usual A.I.D. policy and practice of matching appropriately skilled personnel with the importance of the assignment. It forced a small group, periodically calling on others in USAID/Sudan, to manage a program of over US$200 million in Title II food and nonfood emergency assistance. The group's management tasks required extraordinary effort, time, and dedication.

The use of inexperienced and too few people led to mistakes and reduced the impact of the program. Although every country has its own characteristics, managers with emergency food assis-

tance experience in other drought-stricken areas could have anticipated possible problems in Sudan and taken steps to eliminate or mitigate their effects.

Only in July/August 1985 was the staff augmented by one monitor at Port Sudan, one person to cover the Eastern and Central regions, one person for the Darfur and Kordofan regions, and one person for administrative support. Additional staff was recruited to keep better records of the flow of commodities purchased under the emergency program, thus improving the record-keeping and the field reports. PVOs commented on the usefulness of having A.I.D. representatives in the field to work with them.

2. USAID/Sudan's management task was made more difficult by the weaknesses of the Government of Sudan and its inability to respond quickly and forcefully in dealing with the growing food emergency.

3. A.I.D.'s normal management system did not allow sufficient flexibility and speed to deal with the emergency successfully. At the USAID/Sudan level, particularly in an emergency of the size and complexity of the Sudan drought, the ability to take quick, decisive action was important. However, the A.I.D. management system is designed as much for control as for action; major decisions and actions are considered in a deliberate manner, usually after much consultation. Both USAID/Sudan and A.I.D./Washington successfully solved many problems "despite the system," but the system was often a hindrance to and not a help in meeting the food emergency.

The USAID Director found the normal A.I.D. procedures complex and time-consuming, especially with respect to contracting. His staff did not include the full complement of contract officer, lawyer, and other administrative personnel needed to effectively deal with the emergency. He sometimes did not have the authority to sign a contract because the amount was too large. Furthermore, because of the size or special characteristics of some contracts, normal regulations called for the contracts to be sent to Washington. Although drawing on REDSO staff or on pickup teams from A.I.D./Washington helped in emergencies, normally such staff remained in-country for only a limited time and some were not experienced in the type of problems encountered in Sudan.

Several of these problems were temporarily solved with the tacit understandings that "we'll fix it later." However, the Mission Director and other senior A.I.D. employees were sometimes placed in ambiguous administrative/legal situations for reducing red tape in order to save lives.

4. Most of A.I.D.'s coordination efforts took place in Khartoum via USAID/Sudan and not in Washington or donor country capitals. Donor coordination was carried out by the Mission at

the country level to ensure that programs did not duplicate each other or compete. In-country program coordination was also valuable for exchange of information about operational problems.

USAID/Sudan coordination efforts were less effective in getting other donors working in Sudan to increase their food contribution or to supply more equipment on an emergency basis. Such efforts are more successful when carried out in the capitals of donor countries by Washington-based staff or the U.S. Ambassadors in those countries.

the Government of Sudan did not handle coordination of emergency assistance; the local U.N. office was responsible for the coordination. Its attempts to solicit funds and coordinate responses were not especially successful because other donors did not provide their agreed-on contributions.

Donor countries tended to wait for the United States to make a move before committing themselves. To encourage their national governments to respond, representatives of donor countries preferred a clear U.S. declaration of intent. No announced U.S. commitment or a vague one discouraged other donors from making an early announcement of help.

5. USAID/Sudan's use of the private sector, local governments, and PVOs to help manage and implement parts of the program was successful. Using PVOs to work with local governments to develop criteria for distributing food and to monitor distribution, combined with the use of the private sector for transporting food, worked well in Sudan. Often PVOs had the confidence of the local government and so were able to monitor feeding programs and receive better and faster responses than did visitors from the capital. Generally, good relations allowed PVOs to work with local leaders or sheiks and enabled them to gain better insight into the local scene.

USAID/Sudan's general feeding program strengthened PVO organizations and achieved A.I.D.'s objective of feeding people in their villages. The grassroots contacts of PVOs helped keep farmers and their families in their villages. thus when the rains came in 1985, the farmers were generally in place to receive seed rations for planting.

6. USAID/Sudan did not try to link the food emergency with long-term development activities in a substantial way. In situ feeding that enabled people to quickly return to farming was carried out. Seeds were distributed to farmers when the rains came, but they were ordered and delivered to villages very late. In situ feeding also was used because it reduced the spread of communicable diseases, which strike particularly at young children.

Other donors and UNICEF-organized programs helped rehabilitate local water wells in villages. Some PVOs are planning development activities, including the possibility of food-for-work programs, for 1986.

3.2.2 Conclusions

1. A.I.D. management of the Sudan food emergency could have been improved by using sufficient, experienced personnel and by using a more flexible, speedy decision-making process.

2. The performance of other donors and international agencies was an important determinant of A.I.D.'s overall success; however too much responsibility for ensuring the cooperation of other donors was left to USAID/Sudan.

3. USAID/Sudan's strategy of using the private sector, local governments, and PVOs was effective and would have worked even better but for the need to distribute food during the rainy season, which was unplanned.

4. The strategy can be improved in 1986 by using more than one private trucking firm and by building up more local expertise to assist the PVOs.

5. USAID/Sudan's emergency food assistance strategy also resulted in other important benefits: increased private sector, PVO, and local government activity and improved capability among Sudanians to handle an emergency.

6. Despite in situ feeding, the lack of linkage between the food emergency and longer term development led to very late rehabilitation responses, such as provision of sorghum seed.

3.2.3 Recommendations

1. A.I.D./Washington should refine its management of all aspects of food emergencies in Sudan and stop trying to get by with existing management personnel, practices, and systems. It should focus, via an early management review, on the sufficiency and experience of management personnel and the adequacy of intended management practices in each food emergency--just as it does when it examines project management during the design phase. The review should include A.I.D./Washington, USAID/Sudan, and A.I.D. relationships with PVOs, the private sector, various levels of government, and other donors.

2. A.I.D. should provide the Mission with sufficient, experienced personnel when a food emergency arises. A computerized A.I.D. roster should be developed from which such A.I.D. personnel could be drawn.

3. A.I.D. should develop a separate, rapid decision-making track to deal with food emergencies such as the one in Sudan in 1984-1985.

4. A.I.D./Washington should take major responsibility for the coordination of donors and international agencies involved at the country level in food emergencies in 1986.

5. USAID/Sudan should extend and improve its strategy of using the private sector, local governments, and PVOs to help manage and implement its emergency food program in 1986. In particular, more effort should be incorporated in 1986 to build Sudanese capacity to cope with emergency food programs.

6. From the very beginning, USAID/Sudan should plan its 1986 emergency food assistance in the context of longer term development. Particular attention should be given to the potential for food-for-work project to assist in building road, water, and other infrastructure while emergency feeding is still required. USAID/Sudan should also examine the long-run issue of whether people should be encouraged, through in situ feeding, to remain in the arid north (where agriculture is subject to frequent droughts) or whether, over time, they should be encouraged to move farther south by linking development programs in the south with the pressures of the drought in the North.

3.3 Impact

The 1984-1985 emergency food assistance program made a critical difference for beneficiaries, but food arrived late and in insufficient quantities to meet minimal, identified needs.

3.3.1 Findings

1. Sudan was already experienced in handling Title I and Title III assistance, which over the last several years has rapidly expanded to meet the needs of city dwellers. The size of PL 480 Titles I and III programs had been growing over the last several years. Title I assistance to Sudan was 161,000 MT in 1980-1981 and 72,000 MT in 1981-1982. As consumption increased as the effects of the drought became more severe, Title I assistance jumped to 304,000 MT in 1982-1983 and rose to 347,000 MT in 1983-1984. In FY 1984-1985, 315,000 MT of Title I wheat and

flour were approved. This was 32,000 MT less than in 1983-1984, but there was a carryover of 121,000 MT of FY 1983-1984 Title III wheat and flour. (Table 5 provides information on food-grain consumption requirements, supply, and the food deficit.)

2. At the margin, the food that was delivered to rural beneficiaries was very important and made a critical difference in keeping many of them alive and in their villages. USAID/Sudan's emergency food effort provided no more than one-third of the food needed by beneficiaries during the critical period just before the rainy season.

CARE and OXFAM reports for May 1985 show that beneficiaries in northern Kordofan received the equivalent of 6-10 days supply of food from USAID/Sudan distributions during May 1985, or 19-33 percent of the grain equivalent minimum planned for each beneficiary for May. However, these amounts of grain, plus modest additions in June, July, and August were critical to survival. While major credit for survival must be given to the use of local famine foods, on the margin this additional food assistance enabled many more to survive. The amount of food delivered to isolated areas by helicopter beginning in August was relatively small (2,700 MT); however, recipients interviewed in isolated villages reached by helicopter in October indicated that, in many cases, this food had met desperate needs. (Appendix B contains more information on this important point.)

3. Rural people got too little food to meet their needs and did not get it when needed. Those in easy-to-reach areas got more food sooner than those in inaccessible areas. Based on field data from interviews with beneficiaries and field monitors' reports in Darfur and Kordofan, food reached all segments of the at-risk populations as of September 1985. Before September, a combination of poor road conditions and other logistic problems led to higher rates of distribution in easily accessible areas and little or no distribution of food in inaccessible areas. Private contractors were reluctant to risk their equipment in difficult terrain during the rains and increased trucking rates for difficult areas to four to ten times those for accessible areas.

4. The program, by November 1985, had provided even remote villages with some food. Reaching some of these villages during the rainy season was possible only by helicopter. The three A.I.D.-financed cargo helicopters that began operations in August had flown 328 sorties as of October 27, 1985, carrying 2,787 MT of sorghum, supplemental feeding foods, and health supplies. They also had transported key personnel into difficult-to-reach areas. Most of the trips (80 percent) were to 12 villages in the hard-hit El Geneina District along the Chadian border. In addition, nine other villages were serviced in other districts.

Table 5. Food Grain Consumption Requirements and Supply: Countrywide Food Deficit Information, November 1984 to October 1985

Item	Amount (MT)
Consumption Needs	3,485,000
Food Grain Availability	
Local Production	
Wheat	15,000
Millet	300,000
Sorghum	1,300,000
Stocks on Hand (Nov. 1984)	0
Commercial Imports	0
Food Aid	
United States	
Title I (wheat)	315,000
Title II (sorghum)	82,000
Title II (sorghum)[a]	250,000
Other Donors	
WFP (sorghum)[b]	166,000
Canada (wheat)	30,000
EEC (wheat)[b]	17,000
China (rice)	10,000
Germany (wheat)	7,000
Holland (wheat)[b]	50,000
Total Availability	2,542,000
Deficit	943,000

[a]Requested.

[b]Proposed; USAID has reports that WFP may receive only 25,000 MT and that the EEC request, including Holland, may be increased to 160,000 MT.

Source: USAID/Sudan telegram to U.S. Department of State, December 27, 1984 ("Sudan Title II Emergency Food Request: Second").

5. Inadequate data were available--especially longitudinal data--to enable rigorous assessment of program impacts. Some micro-level nutritional studies had been carried out by various PVOs (OXFAM, LICROS, CARE). They did not always use the same measuring techniques (e.g., some used the simple arm measurement and others used height and weight), nor did they consider the same issues, so that even cross-sectional comparisons were difficult. No control groups were used. Thus, there was no baseline from which to measure the impact of A.I.D.'s emergency food program.

6. People used many different strategies to stay alive. They ate famine foods; sold all their jewelry, cattle, and farm implements to purchase food from urban areas; sent household members to town to work so they could buy food; depended on their extended families for food handouts; lived temporarily with extended family members to get food; or immigrated to towns or camps where food was more available.

As indicated earlier, in the summer of 1985, those in isolated areas were in desperate straits, well into the fourth year of a drought that had worsened each year. These people resourcefully combined migration, alternative resource mobilization, and intrafamily relationships in various ways to survive. Because few supplies had been pre-positioned and distributed in the hard-to-reach areas, the predominant source of food for critical periods during 1984-1985 was traditional famine foods, or the selling of jewelry, cattle, and farm implements to buy food from town markets or from other individuals who had surplus food. Normally, these basic items are never sold except in matters of life and death. Famine foods are generally of high caloric value but are difficult to use and undesirable under normal circumstances.

Typical famine foods were grain stored by termites; peanut shells made into a flour paste; seeds of a poisonous plant soaked to remove toxins and boiled; dried watermelon seeds and shells; dry grass, roots, and tree bark; and palm seeds and leaves of the tebeldi tree.

7. As the 1985 drought year drew to a close, most people seriously affected by the drought had exhausted their resource reserves--jewelry, seed stocks, extended family welcome, famine foods--and, in many cases, their body's nutritional reserves. The extent of their 1984-1985 harvest plus emergency food will determine how well they fare in 1986.

8. With the advent of rehabilitation efforts and a better 1984-1985 crop, but with some people still in need of food, food-for-work programs by PVOs are a promising approach. Numerous food-for-work projects would be consonant with A.I.D.'s long-term development program (village wells, tree planting, village gardens, and the like.). The sample rains of 1985 in Sudan will

produce a bumper crop of sorghum. However, the rains were not uniformly good over the country. For 1986, the at-risk population is placed at 3.5 million, comprising farmers with no harvest or with harvests that will yield less than their family's needs, and pastoralists with insufficient or no livestock to trade for grain.

Many people in targeted rural areas will require assistance in 1986. Food-for-work projects are useful in that they provide for food needs and make a positive contribution to development.

PVOs in Sudan are experienced in food-for-work projects and can be expected to field the type of personnel needed to carefully design, organize, and implement food-for-work projects.

9. General feeding was not programmed jointly with supplemental feeding or health inputs. Supplemental feeding was initiated late in the 1984-1985 period, and health inputs were never introduced in a serious way, amounting to only US$.02 per person in the seriously at-risk category. Although very often supplemental feeding programs are considered at the outset of a general feeding program, this kind of assistance was not requested until the second PL 480 Title II request in December 1984. Where possible, supplemental feeding programs should be planned and implemented at the same time as general feeding programs.

The process for approving specific commodities for supplemental feeding programs was slow, and commodities arrived piecemeal. As a result, CARE and SCF/U.K. did not begin their training programs until August 1985, and by October 1985 most of the supplemental feeding programs were only in their early stages. As of November 1985, 52 percent of the supplemental foods were still unallocated. A total of 48 percent had been allocated, 34 percent to the Kordofan region (CARE) and 14 percent to the Darfur region (SCF/U.K.) (see Table 6).

There was no attempt to integrate health efforts into the general emergency food program for 1984-1985, although the risk of epidemics was one of the considerations in favor of keeping the affected population in their homes rather than in camps. The US$578,000 in medical supplies, while very useful and needed, was allocated on an ad hoc basis in response to specific requests. (See Table 7 for a list of nonfood emergency assistance including medical items.)

10. Monetization of Title II food aid did not work well because of lack of distribution and financial controls. The sales programs diverted food to urban markets when the need was greater for rural areas. Only a small amount of Title II food was distributed through sales in 1985. Sales of Title II food were stopped as a result of information furnished by PVOs

Table 6. PL 480 Title II Commodity Allocation and Distribution in Sudan as of November 1985 (metric tons)

Allocation

Amend. No.	Sorghum	Supplemental Feeding: Wheat Flour	Corn-Soya Milk	Nonfat Dry Milk	Veg. Oil	Beans	Total	Cumulative Allocation
0	82,000						82,000	
1	150,000			1,000	945		151,945	233,945
2	100,000				1,890		101,890	335,835
3	100,000						100,000	435,835
4	75,000		3,645		9,194		87,839	523,674
5	20,000		3,000				23,000	546,674
6			6,855		1,336		8,191	554,865
7						6,000	6,000	560,865
FSR		25,000					25,000	585,865
416				6,500			6,500	592,365
416				1,094			1,094	593,459
416				1,366			1,366	594,825
Total	527,000	25,000	13,500	9,960	13,365	6,000	594,825	

Distribution

Distribution	Sorghum	Supplemental Feeding: Wheat Flour	Corn-Soya Milk	Nonfat Dry Milk	Veg. Oil	Beans	Total	Cumulative Allocation
Kordofan I	46,000						46,000	548,825
Darfur I	31,000						31,000	517,825
Kordofan II	125,000						125,000	392,825
Darfur II	130,000						130,000	262,825
Kordofan SP	18,174		7,428	3,957	3,060		32,619	230,206
Darfur SP			3,000	1,750	1,218		5,968	224,238
Kassala	82,061						82,061	142,177
Central	46,000	12,000					58,000	84,177
Upper Nile	2,000						2,000	82,177
Bahrel Ghazal	2,000						2,000	80,177
EEC Dist.	6,000						6,000	74,177
Omdurman	6,100						6,100	68,077
Refugees	10,000						10,000	58,077
Total	504,335	12,000	10,428	5,707	4,278	0	536,748	
Balance	22,665	13,000	3,072	4,253	9,087	6,000	58,077	

Source: USAID/Sudan General Development Office.

Table 7. Nonfood Emergency Assistance in Sudan for FY 1985, as of September 23, 1985 (in U.S. dollars)

Nonfood Assistance	Amount
Food Monitors	70,000
Department of Defense Airlift of Relief Supplies	90,000
Two Department of Defense Medical Technicians (90 days)	27,000
Grant to Save the Children/U.K. for Local Purchase of Food for Camp	25,000
Lalmba Grant for Internal Transport of PL 480 Food Aid	89,408
UNICEF, Construction for Appeal for Water Project	400,000
Contract to Replace 763,000-Gallon Water Tanks	174,572
Contract to Replace 263 Rolls of Plastic Sheeting Taken From OFDA Stocks	73,377
Helen Keller Grant for Blindness Prevention Program	42,739
General Electric Contract for Locomotive Spare Parts	3,016,561[a]
UNIPAC, Medical Supplies and Transport	367,394[a]
Tuberculosis Syringes, Needles, and Transport	6,121[a]
Liquid Crystal Thermometers	425[a]
Freeze-Watch Indicators	1,105[a]
Dunbar Kapple Contract for Vac-u-vators and Hoppers	346,089[a]
Miscellaneous Drugs	5,762[a]
Streptomycin and Penicillin	170,500[a]
Department of Defense Personnel Becton Assessment Team, Temporary Duty Assignment	340[a]

Table 7. Nonfood Emergency Assistance in Sudan for FY 1985, as of September 23, 1985 (cont.) (in U.S. dollars)

Nonfood Assistance	Amount
Wool Blankets (11,601) Replacements for OFDA Stockpile	46,636
Department of Defense Assessment Team, Temporary Duty Assignment for Railroad Bridge Reconstruction	15,000
Replacement of 1,020 5-Gallon Water Jugs	1,577
Airlift of Medical Supplies	33,334[a]
CARE Grant for Food Distribution Program--Kassala Province	252,504[a]
PSCs in Support of Drought Relief Program	504,500[a]
Grant to Government of Sudan to Purchase 10 Locomotives	8,000,000[a]
Department of Defense Airlift of Helicopters (3) From Oregon	325,000[a]
CARE Grant for Food Distribution Program--Kordofan Province	221,707[a]
Sealift of Locomotive Spare Parts From General Electric	15,143[a]
Rental of Equipment to Repair Railroad	700,000[a]
Arkel-Talab Contract for Repair and Maintenance of Railroad	2,400,000[a]
Wheat Seed Rehabilitation	3,500,000[a]
Save the Children/U.K. Grant for Supplementary Food Distribution	85,000[a]
Total	US$21,017,791

[a]Funded under the supplemental appropriation.

Source: Agency for International Development, Office of U.S. Foreign Disaster Assistance, Washington, D.C.

indicating that the sales program was preventing food from reaching the hard-hit rural areas of the Darfur and Kordofan regions. In the late spring and summer of 1985, only a small percentage of the planned daily ration of 450 grams per day of sorghum was reaching farm families in the hard-to-reach areas. Sales of Title II food took place largely in the market towns and large villages, where the sorghum was purchased at the official price by the townspeople. Larger merchants were said to have purchased and stored the sorghum in anticipation of future price rises as the summer wore on. Knowing there was substantial suffering from malnutrition in the rural areas, PVOs were distressed to see 20 to 30 percent of the total food aid shipments siphoned off for sales to townspeople who by and large were better off.

Apart from the major reasons cited above, there was an uneasiness about the handling of the proceeds from the sales of the Title II wheat and wheat flour. As of October 1985, only 40 percent of the sales of Title II food had been accounted for.

11. The rations used were consistent with the diet of the beneficiaries. Sorghum was selected as the main ration because it is a staple in the diet of the sedentary rural population, and it is grown in Sudan. Although not a regular food for nomads, they will eat it. Using U.N. standards for food equivalents, 450 grams of sorghum per person per day was considered the amount needed to avoid nutritional deterioration of the at-risk population. (USAID/Sudan, in its 1985 request, used 430 grams per person per day. This report uses both figures depending on the source of the data.)

12. Once food distribution systems were in place in rural areas, food deliveries to villages became more regular and certain as food supplies increased during and after the rainy season. As a result, villagers felt more secure about food supplies even though individual deliveries, especially initially, did not fully meet their needs or meet them for very long. Regular food deliveries are important in convincing villagers to remain at home.

Early deliveries, although spotty, tended to encourage farmers to remain in their villages in anticipation of additional food distribution. Once the rainy season was over, it was possible to supply the 22 district dropoff points more regularly and PVOs were able to distribute food more regularly.

13. PVOs were important to good program impact because they effectively identified needy people and distributed food to them on a consistent basis. The PVOs' close contact with both the beneficiaries and the local governments or village chiefs provided them with information about the local scene, enabling them to implement their programs more effectively.

Because most of the PVO field staff in the Western regions spoke the native language and had considerable field experience, they were able to establish effective lines of communication with the beneficiaries as well as with the local sheiks (village chiefs) and district officials. In this way, problems could be identified and resolved early. The advantage of having a staff with in-country experience and knowledge of the language was offset in part by the staff's lack of management experience at the beginning of the program. Many of the field staff, for example, had been teachers in Sudan or had come from other work backgrounds that did not prepare them for the managing, record keeping, and accounting tasks required by the emergency effort. This problem was eventually overcome by the addition of more staff with food program management experience and by the rapid improvement of the less-experienced staff in dealing with management problems.

14. The private sector helped the program by getting the major shipments of food to beneficiaries. However, it diminished program impact by delivering food to easy-to-reach sites first and avoiding inaccessible ones. The contracts awarded to Arkel-Talab to transport Title II sorghum and other foods only covered, in general terms, the number of tons to be moved over a given period and assigned no priorities. Thus, the contractor was allowed to operate the routes found to be the most cost-effective rather than being required to give priority to those villages most in need--regardless of ton-per-mile cost. The contract, executed by Sudan's Food Aid National Administration (FANA), was a local currency contract using counterpart funds and was not reviewed carefully by USAID/Sudan.

15. Rural people did stay in their villages, and the emergency food program contributed substantially to this achievement. Although some spontaneous migration occurred in 1985 as a result of lack of food, most of those who left their villages returned after the first rains. Food deliveries to villages were important to ensuring the success of the in situ feeding policy. Even the limited amounts of food delivered to the villages at the beginning of the rainy season encouraged farm families to return or remain in their villages.

16. A.I.D.'s emergency food assistance program strengthened PVOs and local governments (village leaders and sheiks) by actively involving them in the implementation of the program.

17. The massive U.S. program seems to have reduced the involvement of other donors, who seemed to believe "the United States will do it anyway." the U.N.'s special appeals for assistance did not produce impressive results.

The U.N. calculates donor food assistance in three categories: drought, refugees, and market. In all three of these

categories, as of October 3, 1985, only one donor had provided over 100,000 MT--WFP, which furnished 120,000 MT. A.I.D. provided 900,000 MT. The next largest donors were the EEC, 75,000 MT; United Kingdom, 40,000 MT; Canada, 34,000 MT; Federal Republic of Germany, 26,000 MT; and the Saudi Red Crescent, 24,000 MT. Band Aid contributed 3,000 MT. The total food assistance furnished was 1.3 million MT. Of this total--counting food alone--A.I.D.'s contribution amounted to 69 percent. (See Table 1 for a list of donor pledges and arrivals of food prepared by UNEOS.)

3.3.2 Conclusions

1. The food delivered to rural beneficiaries was very important and made a critical difference in keeping many people alive and in their villages. It was not adequate to meet their entire requirement, but it met the short-run needs of many just as their other reserves had become exhausted. Thus, its marginal value was extremely high.

2. Beneficiaries had much deeper reserves or better traditional coping systems (e.g., famine foods, selling of jewelry and cattle, extended family charity, remittances, or their own nutritional reserves) than anticipated. Thus, even though U.S. food assistance arrived late and in insufficient quantities, fewer appear to have died than anticipated. The multiple coping systems of the Sudanese filled the gap, which, at first, A.I.D.'s emergency food assistance program could not.

3. Some of the at-risk population needs to catch up--to overcome some of the adverse effects of the inadequate food deliveries of 1984-1985 and of drawing down excessively on their various reserves. Supplemental feeding and food-for-work programs are appropriate mechanisms to assist in this process.

4. The slow start of supplemental feeding and lack of health inputs as companions to general feeding substantially lessened the positive impact of the program, especially on disadvantaged groups--children, lactating mothers, and the aged.

5. Better targeting of particular groups in need, even during the worst of the pressure caused by the emergency, would have improved the impact of the program. A better transport contract would have ensured humanitarian, not pecuniary, motives by governing the sequence and timing of food deliveries. As it was, food eventually did reach even the most remote areas, but very late and, when delivered by helicopters, at great expense.

6. The lack of timeliness of the program diminished its impact because it reduced the overall availability of food when it was most needed; the needs of those in inaccessible areas were

not adequately met, and the introduction of supplemental feeding was delayed.

7. USAID/Sudan selected an appropriate food ration (sorghum) that people were accustomed to eating, thus increasing the impact of the program.

8. Additional data are necessary to adequately assess program impacts.

9. Providing food for people in their own villages enabled them to take immediate advantage of the June to September 1985 rains and to quickly reenter economic activity.

10. Experience with in situ free distribution feeding in 1985 enabled new approaches for 1986. Management of these programs by PVOs and local governments in 1985 was good and provides a basis for better targeting of beneficiaries and for food-for-work projects. Food-for-work projects explicitly link emergency food assistance to long-term development, and USAID/Sudan should plan accordingly.

11. USAID/Sudan's experience with monetization of Title II food and during the emergency was disastrous. Not only did the food not reach the at-risk population but accountability for the sale proceeds was poor.

12. The in situ feeding may have kept people in the North who perhaps would be better off on agricultural land somewhat further south, where rainfall is greater and more dependable. This issue needs to be examined to ensure that short-run emergency objectives (i.e., in situ feeding) are compatible with long-run development objectives.

13. The emergency food assistance program generally strengthened or encouraged strengthening of participating organizations such as PVOs, local governments, and even the Government of Sudan and the U.N.

14. A.I.D.'s aggressive program in Sudan and insufficient attention to donor coordination by A.I.D./Washington reduced the response of other donors to Sudan's needs because donors believed that the United States could be depended on to fill any gap that resulted.

3.3.3 Recommendations

1. Improving the timeliness of food emergency assistance should be a high priority as a means for improving program

impact. The adverse effects of not pre-positioning the food prior to the beginning of the rainy season are well known.

2. Aggressive efforts to achieve donor coordination should be undertaken in 1986, especially by A.I.D./Washington, to improve overall program impact. This effort is especially important in 1986 because of A.I.D.'s decision to provide only 50 percent of Sudan's needed food assistance. If the participation of other donors lags, A.I.D. may have to fill the resulting gap, but again with too little time before the start of the rainy season, thus again greatly reducing program impact.

3. Private sector participation, while exceptionally effective as a strategy element, should be better controlled in 1986 to enable continual targeting of the most needy and to otherwise provide for better program impact by ensuring that program managers, not logistics dispatchers, direct food movements.

4. The general and supplemental rations used in 1984-1985 were satisfactory and should be continued in 1986.

5. General and supplemental feeding and health inputs should be planned and implemented together in 1986 to increase the impact of the program on the most vulnerable and needy of the at-risk population.

6. Supplemental feeding should be continued in 1986 until USAID/Sudan is assured that the severely at-risk population being fed has recouped its reserves, including some on-farm food stocks. The groups to receive this additional food should be carefully targeted.

7. To ensure good program impact, PVOs should continue to be used in 1986 to distribute food. Their role should be strengthened as appropriate, especially by assisting PVOs in logistics and in recruiting and training Sudanese for higher level positions of responsibility in emergency food activities.

8. In situ feeding should be continued in 1986 as a means of achieving program impact, but this element should be examined in light of the very unpredictable rainfall patterns in the North and, given this pattern, the long-term development implications of in situ feeding.

9. In situ feeding should be subject to careful targeting in 1986, including targeting for food-for-work projects run by PVOs in cooperation with village leaders. The food-for-work projects should be linked directly to USAID/Sudan's long-term development strategy in Sudan.

10. The attempt to monetize Title II in 1984-1985 should be examined by USAID/Sudan and lessons learned distilled from the

experience. The attempt was unsuccessful, and USAID/Sudan recommends against monetization in the future. However, given the success of monetization in some other countries, and based on lessons learned from 1984-1985, monetization should be experimented with again in 1986.

11. Two studies should be undertaken in 1986. First, baselines should be established for the areas in which PVOs will be working. Second, the phenomena of famine foods and the other traditional coping methods that allowed Sudanese to survive beyond USAID/Sudan's most optimistic assessment should be studied.

3.4 Planning and Management

3.4.1 Findings

Planning and management systems did not account sufficiently for unpredictable events.

1. Substantial planning went into the 1984-1985 emergency food assistance effort, but it was in support of a scenario that depended on pre-positioning the food prior to the rainy season. After pre-positioning became impossible because of shipping delays and the rains, another action plan never emerged nor was useful contingency planning carried out. In 1984, as USAID/Sudan observed the at-risk population growing rapidly, it began to investigate the port, the railroad system, the availability of trucks, the road system and the condition of the roads, the willingness of PVOs to help distribute and monitor Title II foods, and the like. Experienced Food For Peace officers from REDSO and Pakistan were requested for temporary duty to advise on the design of the program. The Mission sent members of its agriculture staff to the field to assess crop prospects. Estimates were made of local costs of moving the Title II commodities, and use of counterpart funds was worked out with the Ministry of Finance.

All of these diverse activities were put into a coherent plan. Dialogue continued with A.I.D./Washington as these pieces fell into place, and the first Title II request was approved and the second request submitted. A computer program was developed for relating supply and demand requirements to shipment arrivals, donor contributions, port capacities, and so on. In all of these efforts, the performance of the small but dedicated staff was excellent.

USAID/Sudan's plan at the start of 1985 appeared difficult but "do-able" despite the soaring number of persons at risk--from

1 million in June 1984 to more than 2 million by December 1984 in Western Sudan alone.

Although the arrival of the sorghum under the first request was delayed, the initial 20,000 MT had moved well and was delivered to the 22 district staging areas in only 19 days. A.I.D./Washington had indicated its willingness to do what was necessary to help meet this food emergency. The second Title II request was approved by mid-January.

However, only 75,000 MT of the 250,000 MT of sorghum requested was approved because of lack of funds. The supplemental feeding request was approved in principle, but only a fraction of the amount requested could be shipped because of the lack of funds. This problem was not resolved until the end of March-early April, when the supplemental food appropriation for Africa was approved by Congress and signed by the President.

At this point, it was clear that to pre-position the bulk of the sorghum and other foods before the rainy season, particularly in the remote areas, required a greater transport capacity than had been planned. by this time, however, it was too late to develop alternate plans.

2. <u>It is hard to pinpoint exactly where Murphy's law took over, but once pre-positioning became almost impossible, a serious unraveling of USAID/Sudan's strategy began</u>. For example, in 1985, the railroad never moved more than 750 MT a day. This was about half of the 1,500 MT estimated by the planners. Because of equipment failures and other difficulties, shipments dropped to 450 MT per day. The planned schedule slipped further when the chairman of the Sudan Railway Company refused to give top priority to moving food over sugar and other cargo. This further reduced the amount of food moved by the railroad.

This, in turn, increased the pressure on the trucking system, which had little excess capacity. Although the failure of the cotton crop freed some trucks that would otherwise have been used to transport cotton, the additional trucks were insufficient to meet the additional demand surge on the trucking system. Also, devaluation had made imports of fuel and spare parts (i.e., operating costs) more expensive for the truckers. As a result, truckers asked for substantially increased rates, to which the Government responded with a rate freeze. When the truckers went on strike, the Government backed down, but additional time was lost.

Following the coup d'etat on April 7, 1985, the new government, for 6 to 8 weeks, made few decisions, including signing of contracts. Thus there was a month's delay in signing the second contract with Arkel-Talab for the transport of the remaining Title II commodities. Although the Mission was very active

during this time, in general, donors did little during the 6 to 8 weeks while they waited for the new government to organize itself.

Because of lack of donor coordination at one point, 20 ships from the United States and other donor countries arrived in Port Sudan with no advance notice to the port director. Fortunately, this was worked out without serious demurrage charges, but additional time was lost.

Shortages of fuel should have been foreseen and stocks pre-positioned in hard-to-reach areas before the rainy season. This would have avoided the necessity of airlifting fuel supplies that occurred later on.

The good news was that the rains came early and broke the drought. The bad news was that the rains came in early June instead of late June. This reduced even further the time available to move food grain into the hard-to-reach areas.

3.4.2 Conclusions

1. Substantial planning was carried out by USAID/Sudan at the beginning of the 1984-1985 period. The plan was plausible and widely accepted; however, unforeseen events caused serious slippages in the planned schedule. The delays should have triggered the realization that a major restructuring of the old plan was needed. The earlier that such a need could be recognized, the better the chances of developing a new strategy or of salvaging part of the old plan. Building contingencies into the original plan would have provided alternate solutions that could have mitigated the effects of the delays. For example, a decision could have been made to send all of the food directly to the remotest regions for pre-positioning on the theory that the more accessible areas could be reached during the rainy season. By April, when trucking costs were beginning to rise significantly, perhaps off-the-road heavy duty trucks could have been imported by donors to better handle the surge of activity that was expected to result when the food shipment bottlenecks broke.

2. A better information system and better tracking of the critical action deadlines would have given more time for developing new plans in areas where contingency plans did not exist and alternative courses of action were not immediately apparent.

3.4.3 Recommendations

1. A.I.D. should design its emergency food programs on a realistic time frame. It should provide sufficient resources, including experienced management.

2. Good contingency plans should be developed in advance for changes in key events that would substantially affect program impact.

3. A margin for error should be applied to program areas where full contingency planning is not undertaken.

4. The information base for planning and decision-making should be improved in critical areas such as baseline nutritional status, realistic logistics capacity, normal and crisis migration patterns, storage and traditional reserves.

3.5 A.I.D.'s Strategy for Emergency Food Assistance in 1986

3.5.1 Findings

1. The United States has informed the United Nations, and through them the other donors, that it plans to provide only up to 50 percent of the help needed in 1986. A.I.D. has proposed to pass the lead role it played in the 1984-1985 emergency to UNEOS and WFP. This proposal is now under discussion within A.I.D. and between A.I.D. and U.N. headquarters in New York.

2. There is a serious danger of repeating in 1986 one of the major causes of difficulty in 1985--that is, not pre-positioning the food (sorghum and supplemental feeding foods) before the rainy season. Whether part or all of the food comes from local purchase or Title II and other donor imports, it must be pre-positioned before the end of June to ensure delivery to the target groups who will be in their fifth year of drought and not likely to survive a rainy season without food. There are two principal reasons for believing that food may not be pre-positioned in time: (1) lack of certainty about the size of Sudan's 1985-1986 harvest, which has delayed USAID/Sudan's and A.I.D./Washington's actions in setting and approving firm food import targets or local purchase, and (2) the possibility that UNEOS may not be able to find sufficient food and financing to meet its 50-percent target.

2. The 1986 scenario calls for the United States to provide its "up to 50 percent" of food assistance via PVOs (ARDA, CARE, SCF/U.S. and SCF/U.K., and WVRO). A.I.D. would directly consign

food to the PVOs, as well as financial support to cover its inland transport. This should work well if the food arrives in Port Sudan in time. These PVOs are already working in Sudan, where they have established a good record.

3. The U.S. program is based on estimates of an at-risk population of 3.5 million, of which 1.0 million will require supplemental feeding. The calculations are based on a 9-month supply. General feeding will require 443,000 MT, of which 280,000 MT represent requests by PVOs. The calculations of cost for the 1986 emergency food program for Sudan will vary depending on the price paid in Sudanese pounds for the sorghum and the exchange rate used. USAID/Sudan suggests US$133 per metric ton at 3.3 Sudanese pounds to a dollar. If one estimates that sorghum costs are 42 percent and that administrative costs (in-country transport and storage) are 58 percent, the total amount would be around US$140 million for 443,000 MT of locally purchased sorghum.

Given the uncertainties about the 1985 harvest and the need to move ahead, USAID has suggested that 400,000 MT be used as the amount of sorghum required in 1986. The estimated cost of purchase and distribution of 400,000 MT at US$133 per MT on the above assumptions would be US$126 million.[1]

4. It is hard to envisage a major macroeconomic policy dialogue role for Title II emergency food assistance that is not already covered by the substantial Title I and Title III sales programs. The FY 1985-1986 program calls for US$50.0 million in Title I food imports of wheat and wheat flour. USAID/Sudan for some years now has used this program together with its commodity import program to establish a policy dialogue with the Government, which has shown some success in price policy and other agricultural policy considerations.

5. Since Sudan is not a food-deficit country in normal times, at least for the rural population, it is not likely to have regularly recurring chronic food deficits requiring substantial Title II general feeding programs. However, there are economic actions, such as providing seeds; reopening village water wells; developing some types of food-for-work programs for water resources, environmental control, and similar activities that could be instituted on an ongoing basis.

The PVOs that have been working on the 1984-1985 drought and the 1985-1986 programs are particularly well placed to plan and execute the kinds of economic transition and rehabilitation activities mentioned above.

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[1]Basic information taken from USAID/Sudan (telegram 16052, dated November 13, 1985).

3.5.2 Conclusions

1. While shifting central responsibility for emergency food assistance to the U.N. is appropriate, accomplishing this change successfully will require full donor cooperation and early certainty about Sudan's emergency food needs in 1986.

2. The U.N. also must carry out its share of the 1986 activities effectively or the United States will either have to come back into the situation in a major way or stand by while a large number of Sudan's poorest face severe food shortages without help.

3. Assisting the U.N. to succeed in Sudan will be central to the success of the U. S. strategy for dealing with the anticipated 1986 food emergency.

4. Other donors, reluctant to respond before the United States, will require a clear and early U.S. lead and formal and informal encouragement via U.N. and bilateral channels at the Washington level if they are to make their own commitments and shipments in time to pre-position food before the rainy season. If this is not done, the United States may face a full repeat scenario of 1985--racing to fill the gap left by others after the rainy season has arrived.

5. The inability to determine the extent of each annual harvest before the harvest is in creates intense timing problems in Sudan's food emergency assistance implementation because donors are unwilling to make decisions based on incomplete crop information. However, the target population is known, particularly in areas served by the PVOs requesting assistance.

6. Nonetheless, to achieve timely pre-positioning decisions based on partial information, about how much emergency food assistance to provide in 1986 must be made early. Specific agreements need to be hammered out with the Government of Sudan concerning exchange rates and purchase prices of locally grown sorghum.

7. In Sudan, there is an important economic role for Title II emergency assistance in vital short-term activities such as timely provision of seed so the in situ target population can plant when the rains come.

8. Other short-term programs like village water wells, food-for-work programs to assist women in developing village gardens near the wells, tree planting for fuel, and similar activities should be feasible.

9. The contribution of Title II emergency food assistance to policy dialogue on macro-issues is more marginal than it might otherwise be because of the policy-dialogue role played by the large PL 480 Title I and commodity import programs in Sudan.

3.5.3 Recommendations

1. A.I.D. should prepare a time-phased action plan immediately for delivering, before the rainy season in June, the "up to 50 percent" of the food needs the United States has indicated it is prepared to provide in 1986. The plan should detail a critical path of the essential issues to be resolved and the policy and financial hurdles to be overcome by A.I.D./Washington, USAID/Sudan, PVOs, and the Government of Sudan. Once approved, a full-time senior A.I.D. officer in Washington or Sudan should be appointed to oversee implementation of the plan.

2. A.I.D./Washington, after review and appropriate modifications, should quickly approve for the full period (9 months or 1 year) the PVO programs for 1986 already submitted by USAID/Sudan for ARDA, CARE, SCF/U.S., SCF/U.K., and WVRO. However, as USAID/Sudan suggested in its 1986 strategy message, initial food shipments should be approved and sent without delay, but they should be limited to a 2- to 3-month supply (USAID/Sudan, telegram 16052, November 1985). The balance would be authorized as requested or modified as needed once questions on the size of the sorghum crop, local purchases, Government intervention, and the like have been resolved.

3. A.I.D./Washington should consider immediately whether to accept the USAID/Sudan proposal to turn over to WFP the 100,000 MT of Title II sorghum sent out under the 1984-1985 program.

-- If A.I.D./Washington decides to do so, it should work with the U.N. headquarters to ensure that the necessary funding for distributing the sorghum is made available to WFP soon. This is necessary so that the food can be used to meet the needs of the target population in early 1986 while other resources are being put in place. Amounts not needed for this purpose should be pre-positioned in the remote areas of Western Sudan.

-- If A.I.D./Washington decides not to transfer the 100,000 MT to the U.N., any sorghum not needed over the next several months for current general feeding should be pre-positioned by USAID/Sudan in the hard-to-reach areas of the West.

4. The U. N. Office of Emergency Operations in New York should be urged to undertake immediately a time-phased action

plan designed to obtain its 50 percent of the 1986 emergency food needed with other donors. This should be done in time to deliver the food and financing required before the rainy season begins.

5. A.I.D./Washington and the State Department, through appropriate diplomatic channels, should help persuade other major donors to respond to the U.N. adequately and in a timely fashion. (This cannot be done effectively from Khartoum.)

6. USAID/Sudan should work with the Government of Sudan and UNEOS to produce, by the end of December/early January, agreed-upon crop estimates and a firm recommendation on local purchase of sorghum, or any appropriate variation--for example, an appropriate mix of sorghum and millet.

7. USAID/Sudan should work out with the Government of Sudan a clear understanding of the exchange rate and the price per kilogram for making local purchases of sorghum for Western Sudan.

8. The UNEOS and USAID/Sudan should start now to develop an operational rehabilitation/long-term development plan for 1986. It should include food-for-work projects, another effort to monetize Title II food grain, and the means to ensure the availability of seed and other supplies for next year's harvest in the targeted areas. Long-term agricultural development efforts should aim to increase on-farm food stocks in at-risk areas.

9. All possible steps should be taken in 1986 to ensure that adequate seeds and related economic recovery inputs are in place for the target group to use at planting time.

10. PVOs should be asked to present economic programs to carry the at-risk population they are now helping through the early recovery period (growing crops and reconstituting livestock) to somewhat more sophisticated food-for-work and rehabilitation projects. For example, CARE already has an economic plan on paper for the northern Kordofan region that includes such activities.

4. GENERIC PRINCIPLES FOR IMPROVING U.S. RESPONSE TO FUTURE FOOD EMERGENCIES

Based solely on the Sudanese evaluation experience, several generic principles and related recommendations were derived that appear to apply to all or most food emergency situations.

1. Preplanning is crucial--once an emergency is evident there is never enough time to prepare.

The increased severity of the 1984-1985 drought in Sudan "evolved" mostly in the minds of decision-makers because they were unprepared. Already into the fourth year of drought, decision-makers had done no pre-planning--the proverbial ounce of prevention in the food emergency context. They still had to deal with the emergency, but they could never catch up. Many Sudanese suffered as a result, especially when relief efforts were hampered by the lack of timeliness of food deliveries.

Preplanning should begin early by concerned governments, perhaps with USAID or other donor assistance. Preplanning should include such areas as identifying the potential at-risk segments of the population in the event of a drought; undertaking studies to obtain baseline data on nutrition, health, and population in potential emergency areas; establishing an early warning network; and establishing a nucleus predisaster planning group that can assess the country's capabilities (see Appendix D).

2. Timing is everything; decisions should be made early and should be definitive.

In Sudan many constraints make it difficult to get sufficient food to people on time--the ultimate objective of emergency food assistance. Timing, therefore, is the principal consideration when dealing with these constraints; enough time must be allowed so that food can be distributed to people when they need it. A good decision made too late is as bad as no decision at all from the viewpoint of the affected population.

Emergency food assistance managers should establish a time-phased action plan for their program; then they should implement it with one eye on the substance of their decisions and one eye on the calendar.

3. Information is always insufficient; decide anyway.

To understand a drought or another national calamity properly and then to act accordingly involves finding and organizing a complex and diverse mix of information in the social, economic, and political spheres. Within this context, it is always difficult (or impossible) to obtain information about many of the important factors. As a result, documented facts and figures for decision-making are seldom available when needed. If one waits until all of the desired evidence is assembled, however, it may be too late.

Appropriate and timely information should be sought as an important part of emergency food programs. If information

remains insufficient, however, decision-makers should decide anyway.

4. Adequacy is central; do not under-resource.

Adequate resources are central to the success of an emergency food assistance program, that under-resourcing one or more of the key inputs is common. Adequacy, in emergency food assistance, includes food, personnel, logistics, money, and so on, which must be packaged together. Every effort should be made to ensure that food, personnel, and other key inputs needed for a successful emergency food program are available in appropriate amounts. A.I.D. should establish a system that would enable it to draw on its most experienced and capable talents quickly and efficiently as droughts or other emergencies occur.

5. Flexibility is necessary; do not be afraid to try a new approach.

A.I.D.'s normal administrative mechanisms do not provide the quick flexible responses needed in drought emergencies or other situations where information flows are erratic and major crises that hinder response to the emergency can arise without warning. A.I.D. should establish a fast decision/action track for emergency food assistance programs.

6. Emergencies take place in the context of longer-term development; relate emergency assistance to long-term development.

Preplanning and planning should identify methods of dealing with food emergencies that contribute to desired long-term development objectives.

In Sudan, reforestation, rural access roads, water development, and grain and seed storage are all parts of A.I.D.'s ongoing development projects. Had a food-for-work program been in existence to help develop these, it could have been expanded as the drought emerged and lingered. (For example, food for work might have been applied to aspects of Sudan Railroad Company roadbed maintenance and repair in direct support of both long-term and emergency needs.) The food-for-work projects would fit into the development plan, the emergency would be dealt with early through an already established mechanism, and the people and Government of Sudan would benefit from skill and asset development. Even as the emergency diminishes, the program can go on at an appropriate level because it is consistent with long-term development priorities.

In situ feeding was used in various ways in Sudan to support long-term development. It was implemented to encourage most farmers to remain in place so that they could then reenter eco-

nomic activity quickly when the drought broke. A special case in the West was mobile in situ feeding, which supplied food to nomads forced to move frequently to keep their few remaining animals alive. However, in Northern Sudan, where rainfall is too sparse and erratic to afford farmers a decent livelihood, in situ feeding might not have been used, thus encouraging farmers to move.

A food emergency may highlight longer term development opportunities. People in Western Sudan planted small vegetable plots wherever a little water was available during the drought. These small gardens might be further developed to become sources of improved nutrition, especially for mothers and children. Followup may mean providing villagers with vegetable seed and technical assistance in water development and other areas when the drought ends.

Rehabilitation efforts to help bring conditions back to normal can bolster long-term development. These efforts can include stockpiling inputs for farmers to use when the rains return, helping reconstitute the livestock population with more productive stock, rebuilding productive infrastructure (e.g., water wells), and planting trees.

These linkages between emergency and long-term programs, if identified early, can be integrated into both program designs, fitting the food emergency response smoothly into the long-term development strategy at all stages so that a special rehabilitation phase (which is difficult to define) would not be necessary.

Emergency food programs should be planned in the context of long-term development efforts from the outset. Ideally, the food emergency should be dealt with in ways that lend direct support to the long-term development program. At a minimum, emergency food assistance should be planned to help drought victims grow their own food and undertake their other normal economic activities in the shortest possible time.

7. The government may not provide the best implementing agency; try the private sector.

Many governments are already overburdened financially and administratively in discharging their normal duties. Their system of administration may not be designed for the fast, flexible action often required when facing drought or other natural calamities. The use of the private sector and private resources may be a better means of achieving emergency food assistance objectives. This was true in Sudan, where the use of private trucks to deliver food and of PVOs to administer the local effort was essential to program success.

Private sector resources should be used whenever feasible to help meet emergency food assistance needs.

8. General and supplementary feeding and health inputs go together; package them appropriately.

In Sudan, supplementary feeding programs were planned separately from the general feeding program. Thus, in terms of nutrition, the emergency program did not fully meet the needs of many of those most severely at risk. USAID/Sudan did not consider health inputs to be critical in Sudan. However, it is well known that when children are badly undernourished, measles and diarrheal diseases become killers, as they did for some in Sudan.

General and supplemental feeding shipments should be planned and implemented jointly unless there are obvious reasons not to do so. Basic health care and medicines should be integrated with efforts to meet minimal food requirements.

9. Droughts have stages; plan and implement accordingly.

Droughts have stages. First, their impact may differ from year to year thus requiring different relief efforts. Second, within the long-term development context, droughts have phases such as problem identification and planning, relief operations, and recovery. Again planning and implementation efforts for the year-to-year changes must also consider the specific stage of a drought.

Preplanning and detailed operational planning should take into account differences between drought years and drought stages. These differences should be part of an overall plan so that emergency assistance activities are integrated with long-term development planning.

10. Even the best efforts sometimes fail; have a backup plan.

Experience has shown that even the best-laid plans can go astray and usually do. Unforeseen events, such as changes of government, civil disorders, or shifting governmental priorities can throw off a time-table and call for flexible, quick, imaginative action. To help remedy this situation, it is desirable to have a backup plan.

Emergency food assistance managers should develop strong contingency plans for key segments of their program so that planners and implementors will have alternate solutions should their preferred plan not work.

11. Impact is ephemeral; monitor and evaluate it carefully.

The precise impact of emergency food assistance programs is difficult to assess. Baseline data is seldom available; "controls" seldom exist; people are too busy to develop good data; and so on. As a result, it is usually not possible to evaluate a program in terms of its objectives--saving lives, meeting a proportion of individual diets, reversing severe or serious malnutrition, curbing the incidence of malnutrition-related medical difficulties. Such assessments are needed, however, to improve emergency food assistance. Monitoring and evaluation efforts or systems are needed as a part of emergency food assistance programs to detect and measure impact.

Mechanisms for monitoring and evaluating impact should be made a part of emergency food assistance efforts. Using these mechanisms, additional data should be collected to enable the impact of emergency food programs to be determined. Preplanning should include data collection for baseline purposes.

12. Management is fundamental; ensure its excellence.

A.I.D.'s strategy for managing food emergencies reduces program impact and cost-effectiveness. USAID/Sudan in-country personnel manage A.I.D.'s emergency food programs. These persons, selected only because they happen to be assigned to the Mission when the emergency occurs, usually have little or no experience in planning for or dealing with food emergencies. They are not excellent emergency food program managers. A.I.D. often understaffs these programs too because USAID directors--in business to achieve development--are reluctant to shift too many resources from urgent development efforts to relief work.

A.I.D. should conduct an assessment of the management of each food emergency situation as it is declared. Additional experienced personnel should be supplied if needed, and sound management practices should be required.

APPENDIX A

STATEMENT OF WORK

1. BACKGROUND

Emergency food aid shipments to Africa have reached unprecedented levels. Between FY 1983 and 1984, U.S. emergency food aid more than tripled in tonnage and value; by June of FY 1985 approved emergency levels for Title II, Section 416, and food reserves combined had again more than tripled in tonnage (1.8 million metric tons [MT]) and quadrupled in value (US$738.4 million). For Sub-Saharan Africa alone, the U.S. Government has supplied more than 50 percent of total food aid requirements. Given the chronic nature of the emergency in Africa, this substantial commitment cannot be viewed as a one-time event. Not only will continued emergency relief be required in the short term, but given the magnitude involved, this assistance will have significant impact on the future of African development. How we program this food aid in the short and medium term can be an important determinant of whether we have positive or negative effects.

It is in this context that the assessment of our emergency food aid programs is conceived. Based on an evaluation of current operations, we will be exploring options for organizing emergency food aid to alleviate immediate distress while, at the same time, setting the stage for longer term development. This means looking at the larger picture when designing emergency interventions--the interrelationships between micro projects and macro policies, the linkages between emergency and regular food aid programs as well as with dollar-funded development assistance activities, and the effects of different distribution mechanisms. It means understanding better the smaller picture--the perceptions of beneficiaries, their socioeconomic and cultural environment, their decision-making processes, and how we can provide for their material needs while preserving a sense of self-worth and human dignity and fostering appropriate changes in behavior patterns. This assessment will provide the opportunity to take stock of our successes and failures to date with a view to programmatic changes and improvements. It is hoped that this review will contribute to improving the effectiveness of our food aid programs in the short and long term and also to developing new models or documenting existing ones that can be used by other donors and host governments.

As a first step in preparing for this review, the AID Bureau for Food for Peace and Voluntary Assistance canvassed all USAID Missions in Africa with emergency food aid programs regarding their experience during the 1983/1984 drought. An exhaustive list of questions was cabled to the field, and the response formed the information base for the Lessons Learned paper pre-

sented at the Food for Peace Officers Conference in Abidjan in April 1985. A primary purpose of this assessment will be to verify, supplement, and update this information with field visits, independent data analysis, and the perspective of program participants. Ultimately, we would like to develop guidelines for the design of future emergency food aid programs.

2. OBJECTIVES

1. To assess the timeliness, appropriateness, and impact of emergency food aid programs in Africa and suggest ways they can be improved

2. To assist USAID Missions, private voluntary organizations (PVOs), host governments, and other donors in programming future emergency, rehabilitation, and disaster prevention activities

3. To provide AID and the donor community with lessons learned regarding the planning, design, implementation, and evaluation of emergency food aid programs, with emphasis on how they can more effectively foster long-term development initiatives and contribute to increased food security

3. SCOPE OF WORK

The following questions are illustrative of the kinds of issues that should be examined in depth by the evaluation team in carrying out the objectives of this assessment. Emphasis, of course, will vary from country to country and will depend on the particular type of intervention being examined and the degree of severity of the emergency situation. Priority should be given to information gathering and analysis leading to improved programming, redesign, and exploration of new options for the formulation of emergency food aid programs.

3.1 Causes of the Emergency

-- What is the nature of the problem (both immediate and underlying causes)?

-- To what extent is the country's food problem related to agricultural and macroeconomic policies that may discourage local agricultural production and marketing?

-- How can the basic food problem be best addressed with emergency food aid?

3.2 Preparedness and Contingency Planning

-- Do national procedures exist for responding to emergencies? Are they followed when an actual emergency occurs?

-- Describe the types and levels of public and private sector security stocks, distribution mechanisms, and how they can be used in a disaster situation.

-- What planning activities could be undertaken to strengthen the government's capacity to respond more effectively to structural and emergency food deficit situations? (Consider the political will and financial capability of the host government to handle emergencies in this context.)

-- How do local people normally deal with food shortages, and how can this traditional coping behavior be reinforced?

3.3 Donor Coordination

-- Were adequate mechanisms in existence, or were they established, to coordinate assessments of donor requirements and implementation efforts?

-- Did these function effectively and how might they be improved?

-- Assess AID's role in relation to that of the host government and other donors in initiating and sustaining coordination functions.

3.4 Needs Assessment

-- Describe the type of information (e.g., rainfall analysis, nutrition surveillance), collection system, analysis procedures, and use of data for early warning, assessment of requirements, declaration of disaster, design of programs, estimation of food input, and the like.

-- Has the logistical capacity of the government and the private sector been adequately taken into account in determining food aid levels?

-- Assess the accuracy, rapidity, and appropriateness of the needs assessment process and AID's contribution.

3.5 Project Design

-- How were target areas and groups of beneficiaries selected?

-- Describe the basic characteristics of the beneficiary population (nomads, sedentary farmers, urban poor, displaced person/refugees), and their relationships to each other. How do these factors influence the food distribution mode selected.

-- Have local food preferences and food consumption patterns of the target population as well as local market prices been adequately considered in the choice of commodities and the selection of distribution systems?

-- Were necessary complementary inputs (i.e., seeds, vaccines, materials, technical assistance) incorporated into the food emergency program?

-- To what extent have participation of beneficiaries and utilization of local organizational structures/resources been built into the project design?

-- How were costs a factor in the design of the program?

-- Were provisions for termination of emergency food aid and/or transition to rehabilitation and longer term development foreseen during the planning stages?

-- Have linkages with regular food aid programs and other complementary resources been explored?

3.6 Management, Monitoring, and Evaluation

-- Did the host government, USAID Mission, PVOs, and local community groups organize themselves effectively to manage the emergency? Discuss in terms of relief planning, organization, resource allocation, postcrisis rehabilitation, and longer term sustainability.

-- What systems are in place for effective commodity accountability and program monitoring? Describe the information generated, costs, manpower, and similar features.

-- What are the respective roles of the host government, USAID Mission, PVOs, community groups?

-- How can management, monitoring, and evaluation be improved?

3.7 Timeliness of Emergency Response

-- Discuss the effectiveness and quantify the exact time frames for the following:

- Needs assessment and project design
- Approval process
- Procurement of commodities
- Delivery of commodities to the country
- Internal distribution of food to the target population
- Arrival of technical assistance

-- Describe constraints and how they were overcome. Suggest ways of expediting these procedures in the future. How can the private sector be used more effectively in the movement of food commodities?

-- If food commodities did arrive late, were appropriate actions taken to avoid disincentive effects on local production and marketing?

3.8 Program Results

To the extent possible, and taking into account the constraints inherent in disaster situations, the evaluation team will present evidence of the effectiveness/impact of emergency interventions in terms of the following:

-- Targeting: extent to which areas and/or victims with greatest need are being reached

-- Coverage: percentage of the affected population being assisted (by the United States, by other donors)

-- Increased availability of food in target areas and consumption by vulnerable groups

-- Incentive/disincentive effects on agricultural production/prices/incomes

-- Improved nutritional and health status of target groups

-- Decreased infant and child mortality

-- Demographic effects: population movements to centers and urban areas, age/sex distribution, and the like

-- Dependency/self-reliance: Have relief programs weakened the self-help capacity of individuals and community groups? How can programs be better organized to reempower individuals and strengthen local decision-making and resource generation/productivity?

-- Policy and institutional reform: How has the emergency affected ongoing food strategy plans and price restructuring efforts? How has the emergency intervention strengthened the capacity of the government to respond more effectively to future emergencies?

3.9 Policy Issues

The following issues are complex and deserving of separate studies in themselves. Yet they are extremely important in thinking about programming options and provide a useful backdrop for discussions. As appropriate, the team should address these concerns in the context of recommendations for program improvement/redesign and lessons learned:

-- Relative effectiveness (impact and costs) of various distribution modes (e.g., community free distribution, maternal and child health supplementary feeding programs, food for work, monetization, triangular transactions, rehabilitation activities) and consideration of alternative distribution mechanisms

-- Comparative advantage and cost-effectiveness of different food distribution channels (WFP, PVOs, host governments) and criteria for selecting among them

-- Linkages with regular food aid programs and other development assistance activities

-- How food emergency programs can be planned to support sector and macroeconomic policy reforms and strengthen food self-reliance, disaster prevention, and longer term development initiatives

-- Criteria for determining when and how emergency programs should be phased in and out

-- Opportunities and constraints presented by the "chronic food emergency syndrome" with regard to funding mechanisms, multiyear planning, program design, conditionality requirements, and the like

4. EVALUATION APPROACH AND DURATION

All team members will meet in Washington, D.C. during the first week of the assessment to review and clarify the scope of work, develop field protocols for site visits and interviews with local officials and program participants, and hold discussions with key AID, USDA, State Department, OMB, and PVO officials.

After this prefield analysis is completed, the study teams will proceed to the country to carry out field investigations: reviewing additional documentation; interviewing key U.S. Mission, host government, PVO, and other donor officials; and inspecting appropriate field sites. Specific attention should be devoted to capturing the perceptions of program participants, either through structured interviews or informal conversations in their own language. The fieldwork will be carried out in approximately 18 working days per team member. If feasible, country studies should be scheduled in an iterative manner so that the approach can be tested and refined through the evaluation process.

Upon return from the field, each team will review its findings and will prepare a draft country report. When all the country studies have been completed, Mission comments received, and the final reports prepared, the contractor's core technical staff will prepare a synthesis of findings and recommendations, drawing out lessons learned about what works, what does not work, and why, from both the operational and policy perspectives.

USAID Missions would be expected to collect all existing data and reports and other relevant records for the team before their arrival. In those instances where in-house or local contractor capability are available, USAID Missions might conduct interviews with program participants in advance of the team's arrival. To the extent possible, USAID Missions should provide logistic support for the team while in-country.

5. COUNTRY SELECTION

Up to four countries will be selected on the basis of data availability, mix of distribution mechanisms and implementing organizations, type of beneficiary population, and government approaches/policies. The receptivity of USAID Missions/host governments, the ease of travel, and the representativeness of the emergency situation should also be taken into account. Because of the difficulty in operationalizing concepts such as "recovery," "rehabilitation," and "transition from relief to long-term development," the selection of programs and countries is critical to capturing the range of existing or potential experience.

6. TEAM COMPOSITION AND LEVEL OF EFFORT

In conducting these country assessments, the contractor will provide at least three specialists per country. Given the range of skills required to carry out this scope of work and the short time frame, the background of these specialists will vary according to the case in question, but must include all of the following areas of expertise:

-- Language skills and country-specific experience

-- Agricultural economics

-- Public health/nutrition

-- Social anthropology

-- Food logistics

-- Policy analysis/program design/evaluation

At least one of the team members, most probably the team leader, will be on the contractor's core technical staff. Although continuity in the evaluation team is assumed, it is not essential for the same consultants to go to all countries.

7. REPORTS

The team will submit a report on each country study as well as a synthesis containing an analysis of those factors that appear to determine program effectiveness, recommendations on how AID can improve its programming of emergency food aid, and lessons learned. Before departure from each country, the team will have engaged all concerned parties (AID, WFP, other donors, host

country, PVOs) in a dialogue concerning their findings and recommendations. The draft country reports are due in AID/Washington no later than 2 weeks after each team has returned to the United States. Five copies will be delivered. Missions will be asked to complete their reviews and respond with comments by cable within 2 weeks of receiving the draft. The final report (including an executive summary and synthesis of findings, recommendations, and lessons learned) will then be prepared and ready for print within 2 weeks of receiving all Mission comments. Ten copies of this report will be delivered. Any translation of the report will be the Mission's responsibility.

APPENDIX B

THE SOCIAL, NUTRITIONAL, AND HEALTH DIMENSIONS OF THE DROUGHT IN SUDAN

1. INTRODUCTION

During the last 4 years, Sudan has experienced a general decrease in rainfall. The decline in rainfall, coupled with the drying up of shallow wells, left most of the 6.3 million people of the northern semiarid areas and southern regions of the west in poor economic conditions. Massive migrations from the northern to the southern areas occurred. Hundreds of spontaneous camps of displaced people were formed, although an exact figure is impossible to determine because of lack of proper records. People migrated long distances to search for food and jobs.

This appendix describes the impact of the drought on the social organization of rural, urban, and nomadic populations of Darfur and Kordofan and assesses the impact of the drought on the people's nutritional and health status.

2. RESEARCH METHODOLOGY

The team spent 18 days in Sudan, carrying out interviews and other fieldwork in 11 villages in Darfur and Kordofan. The team also visited five towns and interviewed some of the urban poor.

In Darfur, the researcher used the USAID/Sudan crop map in determining field sites. The map is based on information collected from field monitors about the amount of rainfall and expected crops for the 1985 agricultural season. The crop map was used (1) to compare the nutritional status of populations who live in areas where the drought continues, for example, in the northern regions, with other areas where rainfall resumed and people planted their fields, and (2) to study future needs for targeting food assistance to severely affected populations.

In the field, short interviews were conducted by category as shown in Table B-1. Beneficiaries were interviewed in villages, camps, and poor urban neighborhoods. Both Sudanese and Chadians were interviewed and asked about the impact of the drought on their lives, livestock, and yields. Table B-2 shows the types of beneficiaries interviewed for this report. Household visits enabled the researcher to verify the amount of food stored in the homes of 10 beneficiaries in the hard-hit areas of northern Darfur. Moreover, the researcher visited the Beida Chadian refugee camp in order to gain a perspective on refugees' problems and to compare the nutritional and health status of camp and rural dwellers.

Table B-1. Category and Number of People Interviewed in Kordofan and Darfur

Category	Number
Village (sheiks) Leaders	4
Village Health Representatives	3
Expatriate Nurses Operating in Camps	3
Field Monitors	15
Mothers Conducting Supplementary Feeding Programs	3
Nursery School Teachers Implementing Supplementary Feeding Programs	4
Midwives	2
PVO Representatives	15
Nutritional Surveyors	4
Beneficiaries	65
Truckers	6
Grain Merchants	4
Camel and Cattle Merchants	6
Total	134

Table B-2. Category and Number of Beneficiaries Interviewed

Category	Number
Poor Urban Women from Nyala	15
Rural Women From Northern Darfur	20
Rural Women From Southern Darfur	8
Rural Women From Northern Kordofan	4
Nomadic Women From Darfur	6
Rural Men From Northern Darfur and Kordofan	8
Children From Northern Kordofan	4
Total	65

Home visits to sick individuals and discussions with health officials constitute the primary sources of data for the analysis of the Sudanese health problems. The sample included towns, central villages, and satellite villages.

Because of the short duration of the field research, this report draws heavily on secondary sources of data. Nutritional surveys carried out by Oxford Committee for Famine Relief (OXFAM)/UNICEF, League of Red Cross, and CARE are the main sources of data on nutritional status of 1- to 5-year-old children. Interviews with representatives of CARE and OXFAM in Khartoum helped provide a better understanding of the overall objectives of both the general and supplemental feeding programs. Discussions with USAID/Sudan officials provided helpful insights on donor agencies' views about implementation problems.

3. THE DROUGHT AND SOCIAL ORGANIZATION IN SUDAN

3.1 The Conceptual Framework and the Dynamic Nature of Drought

For both nomadic and sedentary populations who are mainly dependent on rain for their livelihood, a drought has catastrophic effects on people, crops, and livestock. A drought has a temporal dimension, and as it evolves, it goes through various stages. Generally the longer a drought, the more the suffering. Sudan, normally a grain-exporting country, the 4-year drought severely affected both the nomadic and sedentary populations of Western Sudan.

A crucial concept that underlies such a perspective of change is adaptation; that is, how individuals manage to deal with the contingencies of daily life under conditions of scarcity. This process of adaptation establishes a moving balance between the needs of a population and the potential of its environment. A drought threatens this balance and presents individuals and social systems with many challenges. In Sudan, during the first 2 years of the drought, the strength of the Sudanese social fabric and normative rules of hospitality and sharing operated efficiently to combat shortages of food. But as people sold their assets, spent their savings, and became heavily indebted, social organizations were weakened, necessitating large-scale migration. For Western Sudan, Darfur and Kordofan, the past 4 years of drought meant less sorghum and millet and a dramatic 70 to 80 percent loss of livestock (Steinkrauss, May 1985, 1). International food assistance became a must to save the lives of millions of Sudanese.

During a drought, certain variables, such as the following, become important in maximizing survival strategies:

-- The availability of sources of water other than rain (e.g., deep wells)

-- The strength of the social organization

-- The degree to which the social values of sharing, reciprocity, and hospitality are practiced

-- Resources available to individuals (e.g., savings, jewelry)

The stronger the social organization and the more access to resources a person has, the better are his or her chances for survival in the "first stages" of a drought, that is, the first and second year. Normally, Sudanese farmers dig shallow wells and hafirs to procure water. But, during the second year of the drought, most of these wells silted up.

Moreover, when a drought continues past a 2-year period, resources diminish. Even under the best cultural conditions, where sharing is the norm, the "second stage" brings famine to the majority of the poor segments of a population. In Sudan, the year 1984-1985 represented the "second stage" of the drought. Only after the heavy April rains of 1985 were most of the farmers in the southern parts of Darfur and Kordofan able to resume their agricultural activities. But for the northern sections of the West, the scarcity of rainfall led to cases of 0 to 40 percent harvest expectations for 1985. Targeting assistance for northern populations that continue to suffer from the drought will be the key to the success of the 1986 emergency food assistance program.

When a drought continues for several years past the "second stage," food assistance that is offered in situ becomes ineffective. Resettlement projects, despite all their problems, should be explored. In Sudan, this situation has not materialized yet. But, if 1986 does not bring relief, the issue of settlements in areas where agriculture/grazing is possible should be carefully assessed.

The drought forced many individuals to migrate. Some men left their families and traveled to urban areas. Women and older children tended to join ethnic and village groups who migrated together. Older people and the sick preferred to stay in their villages. Individuals' responses to the drought varied, but the primary goal behind all decisions was to maximize survival. Urban areas attracted many displaced groups because food was always available in large urban markets. Population movements from the north to the south increased because water sources were more available in the south.

Pastoralists in Western Sudan herd cattle, goats, sheep, and camel. Pastoralists inhabit the vast semiarid regions of

northern Darfur and Kordofan. During the summer rainy season, nomads migrate southward. Very little horticulture is carried out and millet is grown only for family consumption. Goats and sheep are sold to buy sugar, tea, and coffee. Nomads live in tents and have few material possessions.

Farming is done mostly by women in Western Sudan. Women grow millet, sorghum, groundnuts, and melons. Children help in agricultural chores as early as age four. Household equipment is owned by women and consists of cooking pottery gourds, baskets, and angarib beds.

Polygamy is practiced in Sudan, and Moslem men are allowed to have up to 4 wives at a time. Women tend to be self-sufficient and are largely responsible for providing for their children. In an interview, a woman said, "My husband left 3 years ago. Now, I am the only person responsible for feeding my 6 children."

3.2 The Sudanese Situation

Sudan is the largest country in Africa. Geographically, it consists of various types of ecological zones that include savanna, semitropical land, scrublands, sandy soils, and arid hills. Cultivation along the Nile is dependent on irrigation. However, for most of the Sudanese farmers, their subsistence agriculture is rainfed.

The 1983 census shows a population of 23 million people. However, this census does not reflect the recent events of the massive population displacement associated with the drought, or the flood of refugees into Sudan. In fact, baseline data on population size, food intake for various groups, mortality and morbidity figures, and other social indicators are all speculative. The country's vast territories, the fluid nature of population movements, and lack of infrastructure make demographic data impossible to procure.

Northern Sudan is divided into 12 provinces. The 1974 decentralization laws led to the emergence of two regional government structures in Western Sudan. Village leaders (sheiks) are part of the regional government structure. They allocate land to farmers and settle disputes among village groups. Omdahs are the leaders of central villages, large villages of 4,000 people. Regional councils operate in towns and cities. Because decentralization is new, lines of responsibility between central authorities and regional governments are not yet clearly delineated. This often leads to confusion at the institutional level and has caused unnecessary delays in dealing with relief efforts for the drought.

In the past 4 years, the decline in precipitation has brought about major changes to the lives of farmers and nomadic groups. Nomads, who normally engage in traditional (transhumance seasonal migration movements) in search of good grazing conditions, suffered heavy losses. Under drought conditions, transhumance patterns of migration, which are generally predictable, were replaced by people's desperate attempts to reach urban centers or any areas where water was available.

For rural male dwellers in Sudan, there is a normal dry-season migration to the cities to search for jobs. During the drought, jobs for unskilled laborers were scarce. Interviews with women indicate that many husbands that left their homes to try to find jobs in cities a year ago never returned to their families. Whether these men died, or failed to find work, or decided to stay in cities, is unknown. Field observations confirm that women and children were the most vulnerable groups.

Although all parts of Sudan were adversely affected by the drought, the estimated 6.5 million people of Darfur and Kordofan were severely affected because of the vast territories of the two regions and the relative lack of transportation or communication between villages and urban centers.

Chadian refugees escaping the war in their country crossed the Sudanese border and competed with the local population for the very scarce water resources available in western Darfur. Refugees joined the spontaneous camps that were formed by displaced Sudanese or formed their own camps in Western Sudan. A few of them, mostly men, succeeded in reaching urban centers and joining the thousands of unemployed beggars that plague Sudanese cities.

The lack of information about the size of affected populations and the continuous flow of refugees to Sudan presented serious problems to donor agencies.

3.3 Sudanese Cultural Values and the Drought

Societies where the values of sharing, reciprocity, and hospitality operate provide traditional mechanisms for the redistribution of resources to the needy. In the case of Sudan, hospitality to guests and outsiders is the norm. Fortunately, these values of sharing, providing for the needy, and hospitality did not disappear with the drought. But as the drought entered its third year, there was less to share, and migration became the only strategy for survival.

Equality in distribution is a strong value that is deeply embedded in rural Sudanese social organizations. A leader's role is locally perceived as one that ensures the equity of distribution in the village. Observation of the general distribution of sorghum in villages verify this role. Village sheiks (leaders) reported that they made every effort possible to inform regional councils of the plight of their communities. Sheiks are now actively involved in sorghum distribution in their communities. They distribute the sorghum equally among households in the village, according to family size.

This principle of "equal shares" works differently in urban areas. Urban dwellers expect "a share" of food assistance regardless of need because the norm is an "equal share to everyone." Naturally, this increases the dilution factors affecting the amount of food received by the needy. Also, close examination of actual distribution reveals that equality is only an "ideal" that never reaches the cities. Government employees, police, army, and so on, receive their "equal share" before others. Although many of them were also affected by the drought, they were not the ones who needed assistance the most.

3.3.1 Traditional Food Distribution Patterns in Sudan

Distributing 10 percent of one's annual income to the poor (zaka) is one of the five pillars of Islam. In a Moslem society, zaka is normally given to poor relatives, neighbors, or the needy, in this descending order.

Urban migration occurs during times of scarcity because people know that in the market place, the fortunate ones who are able to buy will give some of their purchases or money to the needy. During the drought, wealthy Sudanese fed and gave money to the needy as part of the zaka custom. This ability to give and share helped many Sudanese survive the drought. However, as the drought continued over several years, zaka decreased. Personal resources were depleted, and the poverty base increased. Many respondents mentioned that in the first 2 years of the drought, people gave generously to the needy. But in the third and fourth years, less sharing occurred. A village leader explained, "There was nothing to share in some areas. This hurts us very much because we learn as children to share and give to others."

3.3.2 The Ability of Sudanese Communities to Integrate Outsiders

Because of the Sudanese people's sense of hospitality, outsiders generally have a good chance of being integrated into

Sudanese communities. However, the tremendous increase in the number of Chadian and Ethiopian refugees, estimated to be above 1 1/2 million people, and the deteriorating economic conditions in the country are challenging the system's tolerance of outsiders. For example, several incidents of hostility toward Ethiopian refugees surfaced in the eastern regions of Sudan.

3.3.3 The Drought and the Problem of Shelter for Displaced Populations

During the last 2 years, the prices of birish, the woven straw mats used to make shelter, increased dramatically. This led the majority of the people to seek shelter with other families, to take refuge under trees, or to suffer from exposure because of lack of shelter. For refugees, the problem of finding shelter was more acute, as they did not have the strong social networks that would enable them to be quickly absorbed by local populations. In Beida refugee camps, blankets and birishes were distributed to the Chadian refugees. In February and March, the temperature dropped to about 18^{O} C (64^{O} F) and, with the lack of shelter, led to many incidents of pneumonia and respiratory problems among camp populations.

3.3.4 Families, Communities, and the Drought

As expected, the Sudanese drought adversely affected all levels of socioeconomic integration. In the early phases of the drought, people tended to stay together as groups, sharing resources in villages. But as the drought continued and people's resources were depleted, the normal sense of solidarity broke down. The following courses of action were taken by individuals:

-- Many men opted to leave their families to go to urban centers in search of food and work.

-- Some communities migrated together and joined spontaneously formed camps or other villages.

-- Some families migrated to towns. Adults and children would search for food separately during the day, and meet at night at an agreed-upon spot.

-- Some families remained in their communities, preferring "to die under their own roof," as one woman explained her reason for staying in the village.

Social disorders, such as theft, looting, and violence occurred in a few cases at Kosti and Khartoum. But, these inci-

dents were limited and small compared to the magnitude of the problem. The most disruptive effect of the drought is seen at the family level, where many women are still waiting for their husbands to come home, not knowing what happened to them. A woman expressed concern about her absent husband by saying, "He was supposed to return after the rains started. I have not heard from him for a year and a half. I am too weak after the birth of my twin boys. I cannot farm anymore. My neighbors give me some food. I have started going to the feeding center for meals now."

Despite heavy livestock losses, estimated to be 50 to 70 percent of the cattle herds, nomads tended to migrate as groups and seldom as individuals. Nomadic groups were not always accepted by sedentary populations. Goat and camel herds were not as severely affected as cattle, and nomads that owned goats continued to have milk.

In sum, despite the strong social ties that bind Sudanese farmers to their communities and their ethnic groups, the favorable cultural values of sharing and reciprocity, individuals suffered heavy losses because of the drought.

3.3.5 Nutritional Status of Children One to Five Years Old

During a drought, small children and pregnant and lactating women represent the most vulnerable groups of society. Young children, because of their rapid growth rate, are most sensitive to nutritional deprivation, and their nutritional status provides an indication of the severity of the drought. The lack of baseline data on mortality and morbidity and on the nutrition status of Sudanese children under normal conditions makes such studies difficult. The only sources of data on nutritional status of children are reports prepared by OXFAM/UNICEF, the League of Red Cross and Red Crescent Societies, and CARE.

Nutritional assessment teams write quarterly reports using both weight for height and mid-upper arm circumference measures to identify nutritional status trends of drought victims.

The left mid-upper arm circumference of children does not usually change significantly between the ages of one to five. However, it wastes rapidly with protein-energy malnutrition. Nutritional assessment groups tended to use this method as a quick screening device; children were thus classified into three categories: (1) not malnourished (measurement over 13.5 cm), (2) moderately malnourished (measurement 12 to 13.5 cm), or (3) severely malnourished (measurement less than 12 cm).

The three categories for weight for height are as follows: (1) well nourished and mild protein-energy malnutrition (weight

for height (percent of standard) was 80 percent of standard or greater); (2) moderate protein-energy malnutrition (weight for height was 70 to 79 percent of standard); or (3) severe protein-energy malnutrition (weight for height was less than 70 percent of standard).

Tables B-3, B-4, and B-5 present some of the findings of the OXFAM/UNICEF surveys in the northern Kordofan and Darfur regions.

Although the nutritional status reports leave many questions unanswered, they all point to the following general trends:

-- Continued deterioration of nutritional status of children

-- Higher rates of severe malnutrition in the northern areas of Darfur and Kordofan than in southern areas

The available nutritional reports do not answer the following questions:

-- How many children have died of severe malnutrition and related diseases?

-- Has nutritional status improved/deteriorated in areas where general and supplemental feeding occurred?

-- Is the relatively low rate of malnutrition in comparison with the severity of the drought a function of favorable social values operating in the Sudanese situation, or are children given feeding priority by their mothers?

-- How does the projected 1 to 4 percent severe malnutrition compare with the "normal rate of malnutrition" at nondrought times in Sudan?

Until a systematic longitudinal study of food intake is conducted, baseline data will not be available. The fragmentary data that exist now do not allow for comparability. The type of study that is needed requires the continued monitoring of the same group of children during the various stages of the drought.

3.3.6 Status of Sudanese Versus Chadian Refugees: Nutritional Surveys

The League of Red Cross and Red Crescent Societies has collected data comparing Sudanese populations with Chadians living in the same villages/camps (Caron and Caron 1985). Surveys conducted in September and August using weight-for-height criteria show the following results:

Table B-3. Nutritional Status of 912 Children in the Northern Kordofan Region by Weight for Height, September 1984

Degree of Protein-Energy Malnutrition	Number	Percentage
Well-Nourished or Mild	795	87.2
Moderate	100	11.0
Severe	17	1.9

Source: Winer and Zins (September 1984, 2).

Table B-4. Nutritional Status of Children in the Darfur Region by Weight for Height, May-June 1985

Category	Number	Percentage
Adequate Nutrition	614	37.9
Mild Malnutrition	779	48.1
Moderate Malnutrition	205	12.7
Severe Malnutrition	22	1.4

Source: McLean (July 1985, 6).

Table B-5. Comparison of Nutritional Status of Children in Northern Kordofan Between February-March 1985 and May-June 1985

Degree of Protein-Energy Malnutrition	February-March		May-June	
	No.	Percent	No.	Percent
Well Nourished	342	42.2	536	23.6
Mild	362	44.7	1,169	51.3
Moderate	97	12.0	497	21.8
Severe	9	1.1	78	3.4
Percent (80 percent wt/ht)	13.1		25.2	
Mean Percent (wt/ht)	88.7		84.7	

Source: McLean (July 1985).

-- At Beida village, 38.6 percent of the Sudanese population and 78.1 percent of the Chadians were found to be below the 75 percent weight-for-height standard.

-- At Habila, 17.5 percent of Sudanese and 39.8 percent of Chadians are below the 75 percent standard.

-- At Kongo Haraza, 25.2 percent of Sudanese and 66.8 percent of Chadians are below the 75 percent standard.

Hence, consistently, the Chadians' nutritional status was lower than that of Sudanese. The reasons could be that in the past few years, Chadians have suffered from both drought and war. They migrated long distances to arrive in Western Sudan, and generally have less or no social group support.

3.3.7 Traditional Diets and the Drought

Accurate data on daily caloric intake for Sudan is not available. However, OXFAM suggests a grain equivalent of 332 grams per person per day instead of the World Health Organization's (WHO) 450 grams per person per day temporary maintenance standard (Coleridge 1984, 1).

Because Western Sudan is inhabited by both nomadic and sedentary populations, it is difficult to talk about a single grain consumption pattern for both groups. Sedentary populations generally use more grain in their diet than do nomads. Cereal grains like sorghum and millet are the main sources of energy (carbohydrates), and they contain significant quantities of protein (8 to 12 percent), vitamin B, and iron. Vegetables, particularly radishes, onions, and tomatoes, are eaten in large quantities.

For nomadic groups, milk and sugar served with tea are the main sources of protein and simple carbohydrates. Milk fats are the major sources of vitamins A and D.

Under normal conditions, both nomads and rural populations use a combination of grain cereals and milk diets in varying quantities, with the nomads' diet being high in milk, and rural populations' diet being high in cereal grains.

Traditionally, the populations of Western Sudan eat asida, a porridge made of sorghum and millet, and kisra, a thin flat bread. Both are eaten with onions and dried okra. Milk is normally used in making the porridge. Watermelons and desert melons (melons devoid of sweetness) are important to the diets of the people. Coffee and tea are usually served several times a

day with large amounts of sugar. Meat is only eaten on festive occasions.

Traditional beliefs and food taboos influence the types of foods given to children. Eggs are not fed to children because they are perceived to inhibit speech. Coffee is served to children because it is perceived to promote "early talking." Men are usually given a bigger share of food than women. Male children are preferred over female, and thus may also enjoy preferential treatment.

During the drought, sorghum and millet yields dropped drastically, and market prices skyrocketed to 278 percent of normal prices (McLean et al. 1985, ii). People's cash income decreased as jobs became scarce, and savings were depleted. Milk continued to be an important part of the diets of nomads, but normally disappeared from the diets of rural populations who could not afford the high prices. Thus the drought eliminated a major source of vitamin A from the rural diet. Also, fresh leafy vegetables became scarce. "Famine foods" replaced the traditional diets.

In Western Sudan, people adopted many adaptive strategies to the drought. "Famine foods" that are high in calories were eaten whenever available. Famine food include the following:

-- Grain stored by termites

-- Um baz - peanut shells eaten as flour paste

-- Mukheit - seeds of the poisonous plant boscia senegule soaked in water for 3 days to remove toxins and boiled for several hours

-- Lalob - desert dates of balanites aegyptiaca

-- Nubuk - the fruit of the zizypho spinachristi is consumed directly and seeds are ground

-- Dried watermelon seeds and shells

-- Dry grass, roots, and tree bark

-- Deleib - palm seeds (borassus aethiopum)

-- Tebeldi - leaves of the tebeldi tree (adansonia digitata)

People mentioned that they ate once a day instead of three times. Ten percent of the people interviewed said that during March and April, they ate only every other day. Displaced families concentrated their efforts in urban market areas, begging individually for food.

Small vegetable gardens around wells were planted whenever possible, and small desert melons were observed in the fields of all villages of northern Darfur. Desert melons, which are normally fed to animals, were eaten by humans during the drought.

Women sold their jewelry, household items, and cooking utensils. Livestock was sold for cash to buy grain. As the drought continued, many men left their families to look for work. Families spread in different directions throughout the city to maximize their chances of begging for food. Despite the devastating impact of the drought on the family unit and social organization in general, the Sudanese capacity to absorb outsiders remained high. Sudanese hospitality and a deeply rooted sense of equality enabled many families to survive the hardships of the drought. Sharing resources, no matter how small, continued to operate as a survival value in small communities. However, as expected, sharing was decreased in urban situations.

4. USAID EMERGENCY FOOD ASSISTANCE TO WESTERN SUDAN

USAID/Sudan responded to the drought by shipping sorghum for general distribution to Western Sudan. Sorghum was chosen because it is the main staple food in the area. The general feeding program was initially designed for 1.95 million people in Kordofan and Darfur. The initial goal was to deliver 450 grams per person per day for a 3-month period beginning September 1984 and continuing until harvest 1984. However, logistic difficulties and a broader then estimated population base for the distribution of grain diluted the food ration.

4.1 Dilution of the General Ration

-- The first 41,000 MT of sorghum was originally targeted for 25 percent of Darfur's population, or 775,000 people out of 3.1 million. Because of the severity of the conditions, however, the target population was increased to 3.0 million (Roome 1985, 3).

-- Hand-sewn bags (standard 45 kg in Port Sudan) lost 20 percent of their content by the time they reached villagers (Roome 1985, 7)

-- About 50,000 bags (2,250 MT) of sorghum destined for Darfur were stolen by rioters at Kosti.

-- Political decisions were made to divert some sorghum to urban markets.

-- There were long gaps between deliveries, so sometimes people received food sufficient for only 6 days a month (CARE, October 1985, 7).

4.2 Supplemental Feeding Program

The supplemental feeding program did not start in Kordofan and Darfur until the fall of 1985. The program, using a "wet" feeding ration, is implemented by PVOs. Registered children between the ages of 1 to 5 years and pregnant and lactating women are offered milk, sugar, and high-protein tablets. Food is generally prepared and consumed at feeding centers. However, there were many cases of women who preferred to take their food home. Children are generally fed twice a day at the feeding centers. Needy old men and women usually arrive at the centers and ask for and are given food.

The daily rations consists of dried skim milk (100 grams), sugar (75 grams), oil (50 grams), water (1 liter) and high-protein tablets (4.5 grams protein each). This would ideally provide 1,260 kilocalories, if implemented correctly.

There is great variation in the criteria used to register children. Some PVOs use "eyeballing techniques," others use weight-to-height ratios or mid-upper arm circumference. Some provide "wet" rations; others disperse the food via ration cards to an adult in the child's family.

The various PVOs engaged in distributing supplemental feeding rations use different facilities and different models. A visit to the Um Kereidim supplemental feeding center showed that CARE, the implementing PVO, has tied the supplemental feeding program to the School Gardens and Nutrition Centers, nursery schools established by the Sudanese Ministry of Education. Medecins sans Frontieres (MSF) uses hospitals, and Save the Children Fund (SCF)/U.K. uses medical clinics in central villages and distributes under a shady tree in satellite villages.

All PVOs identify and train village women to run their own feeding centers. They hire assistants to cook, clean, and store the food. A record is kept of children's name, height, weight, and nutritional status. Arm bands are used to identify beneficiaries. MSF has a monthly reweighing program and combines the medical and nutritional programs. Most PVOs tend to start their supplemental feeding programs in central villages because of the availability of health or educational facilities to conduct the feeding programs, but satellite villages need supplemental feeding more than the central villages. However, with the passage of time, this problem should be resolved.

5. HEALTH PROBLEMS AND THE DROUGHT

The relationship between malnutrition and disease is strong. The cycle of malnutrition and disease continues to affect the populations of Darfur and Kordofan. Among the many known diseases there, severe gastroenteritis, malaria, respiratory infections, worms, and eye diseases are the most pervasive. Measles has been one of the major causes of child mortality in Western Sudan. Field reports by UNICEF identify the major causes of death among drought-stricken children as follows:

-- Dehydration from diarrheal problems, 52 percent

-- Measles, 25 percent

-- Bronchial pneumonia, 13 percent

-- Circulation failure, 4 percent

-- Hypothermia, less than 1 percent

-- Others, 6 percent

Widespread malaria was observed in Darfur. Tapeworms and hookworms were of particular concern in camps. Camps lacked sanitary measures, and cholera was not uncommon. Many of these health problems are not particularly new to Sudan. However, as the cases of malnutrition increase because of the drought, people's immune systems weaken and they become easy prey to infectious diseases.

Camp populations generally tend to suffer from health problems that include infectious diseases. In Sudan, many cases of cholera were reported in refugee camps and isolated villages. Tuberculosis was a major problem for the Beida camp population.

5.1 Mortality Rates

Mortality figures are impossible to gather in the Sudanese situation. The fluidity of populations moving in and out of cities and camps, coupled with a cultural attitude that discourages discussions of death, make attempts to collect mortality figures futile. Moreover, people do not correlate death with hunger because it is too "painful and embarrassing" to admit to such an occurrence; so if a person dies, it is viewed as "God's will," and the reason for death is irrelevant and seldom discussed out of respect for the deceased and his/her relatives.

Within this context, all mortality figures tend to be speculative. An OXFAM/UNICEF July 1985 report mentions that given the known rates of severe malnutrition, an estimated 25,200 deaths among children 1 to 5 years must have occurred during September 1984 in Kordofan alone. When questioned on how many children died this year in the village, respondents answered, "many, many children." Beyond this vague but telling answer, vital statistics were not available.

Using a set of assumptions consistent with their nutritional surveys, the OXFAM team arrived at the figures shown in Table B-6. The OXFAM report presents these alarming results and states that the 111,959 child mortality figure represents 31 percent of the 1 to 50 year population in Kordofan. This means that 533 children died each day, one every 2.7 minutes (McLean 1985, 4).

5.2 Vitamin A Deficiency

In a study carried out by Dr. Jean Brown for the Sinkat and Haiya areas of the Red Sea Hills in Eastern Sudan, 28 percent of the children examined had vitamin A deficiency (13 percent of them manifested well-developed bitot spots or corneal clouding) (Brown 1985, 4). At Gabiet and the valleys beyond Tambok, 15 percent of those examined had vitamin A deficiency.

5.3 Preventive Services and Drought Victims

Vaccines for childhood diseases are crucial for reducing child mortality rates. Measles represents a major threat to nutritionally deprived populations. The researcher's observations confirm that measles, gastrointestinal problems, and malaria are the three major causes of death among children 1 to 5 years.

Table B-6. Extrapolated Estimates of Mortality Among Children Aged One to Five Years in North Kordofan, Assuming a Linear Trend, March-September 1985

Month	Percent Severe Protein-Energy Malnutrition	Number of Children 1-5 Years	Number of Deaths
March	1.4	360,000	10,800
April	1.8	349,200	12,571
May	2.1	336,629	14,138
June	2.4	322,491	18,059
July	2.8	304,432	19,484
August	3.2	284,948	18,237
September	3.5	266,711	18,670
Total		248,041	111,959

Source: McLean (July 1985).

APPENDIX C

LOGISTICAL ASPECTS OF THE FOOD EMERGENCY

1. OVERVIEW

This logistics analysis concentrates on the Western part of Sudan, the area of USAID/Sudan emphasis and the most difficult part of Sudan to reach with food assistance.

Although Sudan has 976,500 square miles of arid desert, scrubland, and savannah and is approximately one-third the size of the continental United States, it has only 1,376 miles of paved roads. By comparison, the District of Columbia has 1,102 miles of paved roads. In a country the size of Sudan, with only a fragile infrastructure to deliver the quantities of emergency food necessary to prevent a major catastrophe, it was vitally important to realistically assess the country's logistic capacities in order to plan a practical bulk-food delivery strategy capable of meeting the demands of the food emergency.

2. TRANSPORTATION FACILITIES

2.1 Road Networks

2.1.1 Hard-Surface Roads

Of the 1,376 miles (2,200 kilometers [km]) of hard-surface roads, the following roads were available for the transport of emergency food to Darfur and Kordofan:

-- Port Sudan to Khartoum or Omdurman, 523 miles
-- Khartoum to Kosti, 234 miles
-- El Obeid (Kordofan) to Kadugli, 175 miles
-- Nyala (Darfur) to Zalinga, 141 miles

2.1.2 Secondary Roads

Secondary roads, which consist of marked tracks, some graded, were subject to the vagaries of weather, heavy traffic, and disrepair. They became impassable in periods of heavy rain.

The following is a sampling of some of the secondary roads used to deliver food aid and the distances traveled to reach the ultimate beneficiaries:

-- Khartoum to Nyala, 939 miles
-- Khartoum to El Fasher (Darfur), 1,064 miles
-- Khartoum to El Geneina (Darfur), 1,190 miles
-- Nyala to El Fasher, 125 miles
-- Nyala to El Geneina, 252 miles
-- Nyala to Kosti, 670 miles
-- El Fasher to El Geneina, 247 miles

2.2 Port Sudan

2.2.1 General

Port Sudan was built in 1905 as part of the Sudan Railroad Company. A World Bank port development project increased the capacity of the port from 3.0 million metric tons (MT) per year in 1981 to 5.5 million MT per year in 1985.

At the onset of the emergency, the port was handling 4.5 million metric tons annually. From July 1984 to June 1985, traffic increased by 40 percent because of emergency food imports. However, exports during the same period dropped from 1.2 million MT to a negligible 520,000 MT. This helped offset the impact on the port of the imports of sorghum and wheat (over 1 million MT in 1984-1985). Sixty percent of the increase in port throughput occurred during June and July 1985, when a 22-vessel congestion occurred, including seven U.S. ships in 1 week. This was the result of improper scheduling in the United States and among donors.

Neither the Port Director nor the Port Authority had been included in planning shipping schedules nor were they informed of ship arrivals. However, port management was able to keep the average waiting period to 2-3 days for most vessels; the maximum was 12 days during the height of this congestion period. Losses due to demurrage were minimal.

2.2.2 Port Management

The port's work force consisted of 3,000 white-collar workers, 4,500 blue-collar workers, and 800 labor gangs (dock workers).

The Managing Director of Port Sudan was formerly the Port Superintendent for the Sudan Railroad Company (SRC). He joined

the Sudan Sea Port Company following its separation from the SRC in the 1970s. He seemed an experienced, knowledgeable port director. His support staff, however, was not well qualified. The World Bank project provides blue-collar worker training. (No training was available for middle management, who were responsible for port operations and equipment maintenance.)

World Food Program (WFP) and Deloitte, Haskins and Sells International reports indicate that port workers and labor unions were constraints. The Port Director believed they were more of a nuisance than a deterrent to output. the modernization of port operations was reducing labor-intensive operations; the labor force dropped from 1,200 work gangs to 800. Work gangs were not replaced as the work force was reduced by attrition.

2.2.3 Physical Facilities

The principal features of the Port Sudan facility during the 1984-1985 food emergency were as follows:

-- The north dock had 11 general cargo berths.

-- The south dock had a silo (50,000 MT capacity), container, fuel, and ro-ro dock.

-- Vessels up to 650 feet in overall length, with 35 feet maximum draft were acceptable (general cargo berths average 525 feet with some overhand).

-- Lightering (unloading onto a barge) from outer anchorage was available but generally discouraged by the Port Authority.

-- There were 32 quay cranes (one 15 MT, two 10 MT, and the rest 5 MT). They were all of 1949-1954 vintage, British built, and in need of general overhaul, repair, or replacement. Ships' tackle had to be used on occasion.

-- Berths were served by a rail link to the Port Sudan rail head.

Substantial storage/warehousing capacity existed. The south dock silo had a 50,000 MT capacity, with 35-foot evacuators. Open storage was approximately 1.9 million square feet within the port area. Covered storage included more than 50 permanent buildings within the port area, with additional similar storage sheds in close proximity to the port. The quality and cleanliness of these sheds prompted use of one as temporary silo for one shipment of Title II sorghum. Estimates of storage capacity in

the port and the adjacent area indicated that the facility could handle as much as several hundred thousand metric tons of grain.

Different bagging mechanisms were available. Hand bagging in the hold was labor intensive and problematic. For example, low bag weights and poor hand stitching resulted in losses during transit. It was discovered that after about 200 hours of direct sunlight polypropylene bags deteriorated to the point that bags split. In addition, because of their smooth texture, the bags tended to cascade when stacked. Because polypropylene was difficult to hand stitch (the method most frequently used in Sudan), the use of jute bags would be more effective.

Vac-u-vators (for suction removal of unbagged grain) and bagging machines were introduced for the first time in 1984-1985 and innovatively applied by using a covered dockside shed as a temporary silo. Vessels could be unloaded quickly and bagging carried out later. When the bags were machine sewn losses en route diminished.

Due to field complaints, some random sample weight testing was carried out at port side on stitched machine-filled and hand-filled bags. The average for all samples was 43.7 kilograms (kg) as compared with the correct 45.2 kg. The weight differential between hand and machine filled was insignificant. However, the large quantities of chaff and dust in bulk sorghum, which had a low density, reduced the weight of some full bags to below the 45.2 kg weight target.

2.3 Sudan Railroad Company

2.3.1 General Background

The single track system of the Sudan Railroad Company (SRC) network could be reached from south dockside at Port Sudan; it ran through Kassalla to Khartoum and Kosti then went westward to Nyala (Darfur), one of the areas of principal USAID/Sudan emergency food program responsibility.

Only about 50 percent of SRC's locomotives and rolling stock were operational; the reliability of its working equipment was also in question. (A.I.D. supplied 10 locomotives to help relieve this situation.)

The last half of the Kosti to Nyala link had a lighter railroad track (50 pounds compared with 75 pounds); so the number of wagons had to be reduced from 60 to 2 30 x 30-ton car trains, and lighter locomotives were needed to shuttle the smaller trains.

This section of track also suffered from inadequate railbed and culverts; therefore, during the rainy season it often washed out.

2.3.2 Performance

WFP's January 1985 logistic report stated that in 1963-1964, some 15 cargo trains left daily from Port Sudan, whereas today's average may be 4 trains or even fewer. However, during June 1985, rapid emergency food movements by the SRC did demonstrate its potential capacity. During that month, it moved over 4,500 MT of sorghum through the Kosti and Nyala region in a 10-day period, and for four consecutive days it moved 750 MT per day.

USAID/Sudan financed the purchase of 11 new locomotives from General Electric in August/September 1985 to enhance the movement of emergency food. Their tests and trial runs did not indicate that the locomotives would contribute significantly to improve the tonnage moved by SRC. Followup action was being taken by USAID/Sudan.

SRC did not give the highest priority to food transport. For example, SRC accorded a higher priority to the movement of sugar than to emergency food in the spring and summer of 1985. Although complaints were made to the Government of Sudan, there was no change in SRC's policy. This resulted in poor and slow movements of emergency food assistance.

2.3.3 Labor

SRC reportedly has an unnecessarily large, heavily unionized labor force. Work output from this force is reported to be exceptionally low and unproductive.

2.3.4 Management

During a discussion with the team's logistics specialist, the SRC senior management, the chairman, and his general management staff stated that, given overall national transportation needs, SRC had given adequate support to emergency food movements. This narrow view is a hindrance to major improvement in future food movements by rail. However, continued contact with SRC and inclusion of SRC management in overall transport planning may ultimately effect some changes.

2.4 Road Transport

2.4.1 Private Sector

There was no specific registry of private sector vehicles used to transport food. However, the following estimates were obtained from commercial contractors and international agencies:

-- 3- to 7-ton suq trucks: 10,000 to 30,000 trucks (potential 100,000 MT per day movement

-- 10- to 30-ton trucks (some with trailers): 2,500 to 3,000 trucks (potential 55,000 MT per day movement)

-- 50- to 60-ton truck and trailers: 750 to 1,000 trucks (potential 50,000 MT per day movement)

The following is illustrative of the number of trucks available in Darfur and Kordofan:

-- Darfur, 2,400 suq trucks (potential 12,000 MT per day movement)

-- Kordofan, 5,000 trucks, of which 10 percent had more than a 10-ton capacity (potential 27,500 MT per day movement)

The estimates show that the nationwide capacity for transporting goods was roughly 205,000 MT per day.

The private sector trucking involved mainly individual owners of one truck who form small, local cooperatives, although a few Sudanese own truck fleets. Collective management of these resources was desirable, especially when moving such vast quantities of food through transport contractors such as Arkel-Talab.

2.4.2 Public Sector

Food Aid National Administration Fleet. The Food Aid National Administration (FANA) had a small fleet of fewer than 10 Volvo trucks. However, bureaucratic procedures limited their availability for effective use.

Military Fleet. The military adviser to the Chairman of the Relief and Rehabilitation Commission (RRC), when questioned about the availability of military cargo vehicles for moving emergency foods, advised that because of activities by insurgents in the south of Sudan, there was no possibility of using military trucks

in civilian activities. In addition, the military truck fleet was gradually being depleted by the military conditions in the South.

2.4.3 International Fleet

Save the Children Fund (SCF) planned to use 60 trucks of various capacity that were provided through the British Overseas Development Agency. These and other high-cost vehicles would have been of more value to the overall performance of the fleet had their specifications been developed for Sudanese conditions by technically qualified transport personnel. However, the SCF fleet, when in position, will relieve the pressure on the local trucking market. These trucks arrived too late to have much impact on the 1985 program, but they will be needed in 1986.

WFP controlled 100 Fiat trucks, contributed by the Government of Italy, that were suited to smaller loads on hard-surface asphalt roads. The use of these vehicles was limited because most of the roads require heavy-duty vehicles.

The Band Aid fleet (rehabilitated) did not come on-stream during the 1984-1985 drought period. Their physical condition; their availability for use within the international emergency response; and the availability of technical support, spare parts, and the like should be ascertained before including them in the plans for the 1986 program.

2.4.4 Fuel

The availability of fuel in sufficient quantities to meet both vehicle and aircraft needs was a problem. Although importing fuel did not seem to have been a major constraint because of prompt donor action in financing fuel imports, the movement of bulk fuel competed with emergency food movements. The lack of fuel in some areas delayed both aircraft and truck movements, which frequently kept food movements at a critically low level during the rainy season. Preplanning and pre-positioning fuel supplies in the field prior to the rainy season would have alleviated this situation.

2.5 Airlift: Fixed- and Rotary-Wing Aircraft

Airlifting is the most expensive mode of bulk transport and is generally used only to meet a critical need. Airlifting requires an extensive support system for fuel, maintenance, oper-

ations (landing and takeoff), communications, personnel, and commodity supply.

The helicopter airlift, using three cargo helicopters and one C-130 Hercules aircraft for support services, served an area from Nyala west almost to the border with Chad. This area was otherwise unreachable because of a total breakdown of road transportation during the heavy rains. Reports show that on average 37 MT of grain per day were transported to Geneina and other areas in Darfur, or a total of 2,787 MT of emergency food up to October 27, 1985. However, because of the high-ton per mile cost of the helicopter airlift, it should be used only when conditions prevent surface transport to the affected areas.

The need for airlifting emergency commodities can usually be avoided by careful preplanning. In the case of Sudan in 1984-1985, the identification of priority locations for pre-positioning of food and earlier delivery of food could have reduced or even eliminated the need for a helicopter airlift. The need for the European Economic Community (EEC) C-130 food airlift to El Fasher and Western Sudan could also have been reduced or eliminated by more comprehensive preplanning of logistics. Preplanning should have identified the need to increase road transport to supplement the poor performance of the railroad company.

The air drop of bulk food from fixed wing aircraft is less expensive than helicopter transport. However, air drops require a different strategy, including field teams at drop sites to supervise operations. Only four drop sites in the Darfur area were considered suitable for reaching seriously affected populations, and not enough field teams were available to receive the food. Operational procedures for this method of bulk-food delivery should be further examined because this method has more potential than the helicopter alternative.

3. OTHER SOURCES OF INFORMATION

The food distribution system, starting from Port Sudan and extending to the 22 drop-off points was examined by Deloitte, Haskins and Sells under a USAID/Sudan contract in late summer and fall of 1985. The Deloitte report entitled "Report on Accountability System and Other Related Tasks" (draft, October 25, 1985) details the current food distribution system, makes constructive suggestions for improvements, and proposes a commodity tracking system. The WFP's 1985 report on logistics in the Sudan is excellent, and has very useful in-depth information. Both sources were drawn upon for this work.

APPENDIX D

GENERIC PRINCIPLES AND RECOMMENDATIONS APPLICABLE TO OTHER AFRICAN COUNTRIES

Based solely on the Sudanese evaluation experience, several generic principles and related recommendations were derived that should be applicable to other food emergency situations. The synthesis report (A.I.D. November 1986a), which draws on all three country experiences, presents a fuller set of general principles and recommendations.)

1. PREPLANNING

Preplanning is crucial; once an emergency is evident there is never enough time to prepare.

1.1 Analysis

Preplanning is, in major part, the advance consideration of important elements of an as yet undefined food emergency--what these elements are, how they interrelate, and how to intervene effectively to resolve a food emergency situation successfully.

In Sudan, one of the principal reasons the 1984-1985 food emergency effort was not as successful as hoped was the lack of preparation for dealing with the consequences of another year of drought. Although 1984-1985 was the fourth year of drought, there still was a dearth of information about its impact and the capacity of the country to deal with it. Without having thought through such issues as the capability of the logistics system and which Government entity would be given authority to meet the demands of the food emergency, no solid basis existed for donors or the Government to respond rapidly to the food emergency.

In part, the lack of predisaster planning was due to Sudan's not having experienced a serious drought during the prior 20 to 25 years. Many believed the 1983-1984 drought would disappear after the 1984-1985 rains. "Experience" and optimism downgraded the importance of preplanning. This led to the suffering of many Sudanese when relief efforts were hampered because food did not arrive in time to be distributed before the rainy season.

The extent of Sudan's food emergency in 1984-1985 became evident to decision-makers in gradual stages partly because of the failure to collect early warning data and partly because the impact of the drought in a country as large as Sudan manifested itself in stages. However, once the emergency was evident, they had to deal with it, prepared or not. They were required to make

many important decisions with very little information. Activities such as identifying potential at-risk groups, determining appropriate kinds of foods for rations, examining logistic capacity, thinking through management issues, identifying a planning and implementation group, creating an early warning system, and specifying criteria to be used to identify and declare a food emergency should have been undertaken during the early drought years. Having early access to such information would have enabled better decisions and would have improved the effectiveness and success of the overall effort.

Preplanning amounts to the proverbial "ounce of prevention" in the food emergency context. Which countries, then, should preplan? Any country with a history of drought, even if spotty, should preplan. Also any country with even faint reason to suspect that a food emergency is occurring or might occur should preplan. Finally, countries (like Sudan in 1983-1984) already experiencing drought should preplan, even in the face of great optimism about the coming rains. The extent of preplanning and of institutionalized preplanning capability can be made proportionate to the degree of risk that food or other emergencies will occur. Thus, Sudan with no drought for many years might need less institutionalized preplanning capability than Mali, a country that experiences recurrent droughts. However, as drought occurs, this limited capability should grow in proportion to the risk of still another year of drought.

Because many of the elements in a food emergency are dealt with by different people/organizations, their roles must also be accounted for during preplanning. A checklist of important elements/activities for emergency food assistance planning and implementation would be useful in guiding the preplanning efforts of USAID Missions and others involved in food emergencies.

1.2 Recommendations

1. Preplanning should begin early by concerned governments, perhaps with A.I.D. or other donor assistance. It should include such activities as the following:

-- Identifying the potential at-risk segments of the population in the event of a drought

-- Undertaking studies to ascertain the kinds of food that might be needed in a drought situation

-- Undertaking studies to obtain baseline data on nutrition, health, and population in potential emergency areas. (Without this information it is almost impos-

sible to evaluate needs and the successes or failures of any program in terms of number of lives saved or lost.)

-- Assessing the logistic capabilities of transport systems such as port capacity; railroad, road, and water transport (tonnage per day available to transport food); government contracting ability; and financial arrangements

-- Establishing an early warning network and predisaster planning nucleus group, perhaps drawing on the key ministries for personnel. (The United States working with the U.N. should be prepared to help the countries develop these systems.)

-- Setting up criteria for determining when to declare an emergency. (Such a process will make it easier for governments to admit that a food crisis exists and will enable them to declare a national emergency earlier.)

2. Preplanning capability in each country should be at least commensurate with the risks of food or other emergencies.

2. TIMING

Timing is everything; decisions should be made early and should be definitive.

2.1 Analysis

Appropriate timing implies the need to make key decisions in a time frame that will allow food to be distributed to people when they need it. If decision-makers would run their emergency food programs by the clock and the calendar, their performance, from the viewpoint of beneficiaries, would improve, almost regardless of the quality of their decisions. Thus, in dealing with food emergencies, they should seek to make their decisions as far in advance of the deadline for that decision as possible.

2.2 Recommendations

Decision-makers responsible for emergency food assistance programs should carry out the following:

-- Establish a time-phased action plan, taking into account any seasonal impediments to prompt action (e.g., the

rainy season or other logistic, cultural, or political problems such as Ramadan, elections).

-- Identify any issues or roadblocks that must be overcome in order to maintain the time-phased action plan.

-- Work with the host government, United Nations, major donors, private voluntary organizations (PVOs), and the private sector to develop integrated plans with firm time schedules for delivery of materials, equipment, manpower, and food needed to mitigate the effects of the emergency.

-- Ensure proper implementation of the time-phased action plan and amend it as unforeseen events and new impediments occur and encourage major donors to do the same.

-- Make decisions with one eye on their substance and one eye on the calendar. A good decision made too late is as bad as no decision at all from the viewpoint of the affected population.

3. IDENTIFICATION

Information is always insufficient; decide anyway.

3.1 Analysis

Appropriate and timely data are important to effective decision-making; however, in food emergencies, sometimes the urgency of the need conflicts with the time needed to accumulate sufficient information. In such cases, decisions must be made based on the data at hand, however inadequate the data.

To understand a drought or another national calamity properly and act accordingly involves finding and organizing a complex and diverse mix of information in the social, economic, and political spheres. Droughts affect pricing, political stability, foreign exchange, the availability of local currency. They stretch the administrative capability of most developing country governments; demand quick, flexible responses to evolving crises; and place extraordinary surges in demand on transport and distribution systems.

Within this context, it is difficult or impossible to obtain appropriate information concerning the many factors involved: for example, the number of people affected, where they are, how severe their plight is, how much food they need, how soon must it

be provided to avert serious starvation, what is the prognosis for the next harvest. It is even harder to obtain such facts and figures for decision-making when they are needed. Such information may not be available until after the harvest, until field surveys can be mounted, until communications networks are established, and so on. Communications within the country and the at-risk areas are sometimes impossible. Telecommunications within the capital city may be difficult. Even telecommunications between USAID/Sudan and A.I.D./Washington may be troublesome, making it hard to quickly sort out questions on requests for aid. However, if decisions must wait until all of the desired information is assembled, it may be too late to provide effective assistance.

Despite these data problems, decisions can--and usually must--be made with some supporting data in hand if the need is urgent. Thus, the general magnitude of the problem can be determined, the at-risk groups can be roughly identified in the most severely affected areas, and the general level of the crops (good, bad, nonexistent) can be assessed.

Information problems exist at the beneficiary end as well in food emergencies. Beneficiaries seldom know what is "going on." Improving this downward flow of information often solves many problems and smoothes out program operations. For example, in Sudan, many recipients of food did not know where the food came from. The speed with which food had to be shipped precluded labeling the bags in Arabic. Although the handclasp emblem was frequently known in the cities (and sometimes referred to as "Reagan food"), this was rarer in the isolated rural areas where people said that "foreigners" or the PVO gave the food.

3.2 Recommendations

-- Information, insufficient though it is, should be sought actively. In particular, A.I.D. emergency food programs should include a specific information-gathering component to assist decision-makers. USAID Mission directors, A.I.D./Washington, and other appropriate people and offices should also receive high quality reports on key topics.

-- At the outset of the emergency, the communications capacity within the country and between the country and other countries should be assessed, and recommendations should be made to remedy any flaws that would seriously hamper a successful food emergency effort. The following specific suggestions should be considered:

- Once an emergency has been officially declared, if telephone communications with A.I.D./Washington are difficult or time consuming, a dedicated telecommunication lines should be installed, at least for the duration of the emergency.

- Adequate communications between USAID headquarters and the field are also essential for successful management and should be ensured. This is important, for example, for staging areas where food is stocked for movement to villages. If distribution responsibilities are turned over to PVOs, U.N. agencies, or other major donors, adequate communication should be ensured with them as well.

-- If information is still insufficient, decision-makers should decide anyway.

4. PREPARATION

Adequacy is central; do not under-resource.

4.1 Analysis

Adequate inputs are central to success, and yet under-resourcing one or more of the key inputs that determine the success of emergency food assistance program is common.

Adequacy, in emergency food assistance, related to the amount of food made available to meet the needs of the target group and to other resources (e.g., personnel, logistics) that enable timely delivery of the food. Adequate food supplies are essential, and the consequences to the at-risk population of underestimating the amount needed are more serious than those of overestimating. This is true even though overestimating can result in bringing in so much food that local food prices are depressed or storage capacity is exceeded.

Adequate personnel to implement an emergency food effort also are necessary, as are sufficient fuel, port capacity, and vehicles for transporting food.

Personnel requirements are especially troublesome for A.I.D. Except for a few personnel on temporary duty assignment, U.S. emergency food programs are handled by resident staff of the USAID Mission. Often they have no experience with emergency programs (food or nonfood) and are already fully occupied carrying out the Mission's development programs. Seldom are there suffi-

cient personnel to permit the field monitoring and reporting required to keep on top of a major disaster relief program. Moreover, current procedures make it time-consuming and difficult to have personnel assigned for the 3 to 9 months or more of duty required by a crisis.

4.2 Recommendations

-- Every effort should be made to ensure that food, personnel, and other key inputs needed for a successful emergency food program are available in appropriate amounts. Because under-resourcing is common and is the direct cause of program shortfalls, decision-makers should be sure to supply or ask for a little more rather than a little less than they think they will need.

-- A.I.D. should establish a system that enables it to draw on its most experienced and capable talents quickly and efficiently during an emergency. The following recommendations are made with this objective in mind:

  - A.I.D. should establish a computerized roster of Agency personnel, listed by discipline or technical skill, who have had previous experience in managing food and nonfood emergency assistance programs. This would provide A.I.D. with the information it needs to take full advantage of experienced personnel within the Agency who are familiar with emergency assistance programs.

  - A.I.D. should establish a flexible and easy-to-use system to permit transfer and use of these personnel as needed. For example, not all USAID Missions have contract officers, resident legal staff, sociologists with nutrition backgrounds, or logistics specialists. Safeguards should be built in to avoid adversely affecting the annual performance evaluations of personnel who are transferred for relatively long temporary duty assignments (3 to 9 months).

  - A roster should be maintained of contractors and consulting firms with special competence in emergency assistance programs. This should shorten the time required to locate qualified firms or individuals with necessary skills outside the Agency.

5. IMPLEMENTATION

5.1 Flexibility

Flexibility is important; do not be afraid to try a new approach.

5.1.1 Analysis

A.I.D.'s normal administrative mechanisms do not provide the quick, flexible responses needed in drought emergencies or other situations where information flows are erratic and major crises can arise with extremely short advance warning.

5.1.2 Recommendations

-- A.I.D. should establish a special administrative funding and personnel track once a valid emergency has been identified and a policy decision made regarding U.S. help. This should include, but not be limited to, the following activities:

  - Establishing simplified administrative procedures for approving, processing, contracting, and carrying out requests for assistance once an emergency has been declared

  - Developing policy guidelines for the application of these procedures

  - Depending on local circumstances, delegating full authority to the field to approve the use of counterpart funds, sign contracts, call on A.I.D.-financed resources already in the field, and so on.

-- Establishing coordination procedures to permit a unified response that takes into account, within the time-phased action plan, the total context and the various disciplines and forms of assistance required to respond effectively to an emergency (e.g., food, distribution costs, medical supplies, equipment, and personnel requirements).

5.2 Linking Emergency Aid and Long-Term Development

Emergencies take place in a longer term development context; relate emergency assistance to long-term development.

5.2.1 Analysis

Food emergencies occur in the context of long-term development efforts. Preplanning and planning for food emergencies should identify ways of dealing with them that contribute to the desired long-term development objectives.

In the short term, two development-related issues must be considered and acted upon. The first is the desirability of providing emergency food to the at-risk population in their home areas, in ways compatible with their development context, rather than in camps. Delivering emergency food to the village makes it more likely that farmers and their families will remain on the farm, ready to start planting when the rain comes.

In situ feeding was used in various ways in Sudan to support long-term development. It was implemented to encourage farmers to remain in place. A decision might have been made not to use in situ feeding in parts of Northern Sudan where rainfall is too sparse and erratic to afford farmers a decent livelihood, thus encouraging them to move. In Western Sudan, mobile in situ feeding was implemented to supply food to nomads forced to move frequently to keep their few remaining animals alive.

In certain emergency situations, it may be possible to use food-for-work activities or monetization of Title II food and still assist the needy group appropriately. Food-for-work activities can often be tied to development directly (e.g., road improvement, tree planting, or well refurbishing). Food-for-work programs that are in place prior to an emergency (as part of a long-term development effort) could be expanded to meet emergency needs while still serving long-term development goals.

In Sudan, for example, the USAID Mission's ongoing development projects include reforestation, rural access roads, water development, and grain and seed storage. Had these projects been linked to the food-for-work program prior to the drought, the food-for-work projects could have been expanded in the earlier drought years as well as in 1984-1985. Beneficiaries and the government would also benefit from the skills and assets developed through the projects. Monetization of Title I and Title II food could also support food-for-work projects. For example, Title I and II food could be sold at the port and the money used

to purchase locally produced food in Western Sudan for food-for-work projects.

Even free distribution mechanisms need to be sensitive to development issues. For example, as noted above, some nomadic groups in Sudan had to move constantly to keep their few remaining animals alive. Despite the difficulties involved, searching for these nomads each time a food distribution was to be made was a developmentally more appropriate response than forcing them to sell their animals and settle near a town in order to receive food.

A second short-term issue is the need to plan carefully and early for rehabilitation needs. For example, seeds and other inputs needed by the farmers affected by the drought should be pre-positioned for immediate distribution to farmers when the drought ends. Other short-term activities might include providing herders and nomads with animals to help reconstitute their stocks (if the grazing land is not already overpopulated). Villagers may also need help in cleaning out and deepening water wells that dried out and silted up during the drought. Rehabilitation activities such as the food-for-work projects to construct farm-to-market roads, simple irrigation systems, and storage facilities also should be planned for. (The situation may be somewhat different in chronic food-deficit countries where the need for emergency food assistance is endemic.)

A food emergency may highlight longer term development opportunities. Small vegetable plots sprang up during the drought in Western Sudan wherever a little water was available. These small gardens might be further developed to become sources of improved nutrition, especially for mothers and children. Follow-up may include providing villages with vegetable seeds and technical assistance in water development and cultivation practices that could be used when the drought fades.

Ideally, food emergency programs would be planned to fit smoothly into development efforts without a special transitional rehabilitation phase. To achieve a transition into and out of an emergency food assistance program that is consonant with long-term development efforts requires preplanning (what might happen and how should it be dealt with?) as a basis for more detailed planning (how does/can the emergency fit into and influence the long-term development effort?) and action. Without this kind of planning, the emergency tends to take on a life of its own, with most people reacting to it as an isolated event to be handled as quickly as possible in order to get back to development. With this kinds of response, many opportunities for supporting long-term development initiatives may be lost.

These linkages between emergency and long-term programs, if identified early, can be incorporated into the respective program

integrated the food emergency response into the long-term development strategy at all stages so that a special rehabilitation phase (which is difficult to define) will not be necessary.

5.2.2 Recommendations

-- Emergency food programs should be planned in the context of long-term development efforts from the outset. Ideally, the food emergency should be dealt with in ways that lead directly from and back into the long-term development program.

-- At a minimum, emergency food assistance to drought victims should be planned to be effective in helping them grow their own food and undertake their other normal economic activities. Thus, priority should be given to programs that allow the affected population to remain in their villages so that farmers are better placed to farm their land when the drought is over.

-- Plans for the purchase and distribution of seeds and other inputs should be established early on in the drought cycle in order to be able to assist farmers who have had to eat their seeds to survive. Timing is critical so that farmers can plant with the first rains.

-- Other rehabilitation activities should be planned well in advance and started as soon as possible once the drought is broken. For example, the Italians have committed US$60 million to the rehabilitation of an integrated rural development project area in Northwest Sudan--mainly for short-term development activities. Consideration should be given as well to other related activities that make the villages livable, such as water well rehabilitation and reconstituting herd animal stocks as appropriate.

5.3 Involving the Private Sector

The government may not be the best implementing agency; try the private sector.

5.3.1 Analysis

Many governments are already overburdened financially and administratively in discharging their normal duties. Their sys-

tem of administration may not be designed for the fast, flexible action often required when facing drought or other natural calamities. The use of private sector entities and resources is often a better means of achieving emergency food assistance objectives. Transport and distribution of food by the private sector, for example, may be the only way to ensure timely delivery in some circumstances. This was true in Sudan where the use of private trucks to deliver food to private voluntary organizations (PVOs) and from PVOs to beneficiaries was essential to program success.

Other areas in which private sector involvement should be encouraged are accounting and reporting systems, fuel supply, and food processing.

5.3.2 Recommendations

-- Using private sector resources (e.g., transport companies) to help meet emergency assistance needs should be explored and implemented wherever feasible. This lightens the load on the already seriously overburdened government.

-- Using PVOs (local PVOs as well as CARE, Save the Children, OXFAM, and others), in conjunction with the private sector, as contractors, supervisors, and monitors to ensure successful performance should be considered wherever feasible.

-- When the government is contracting with the local firms using donor funds, donors should provide the government with technical assistance to ensure that an adequate scope of work with sufficient safeguards is included in contracts.

5.4 Combining General and Supplemental Feeding Programs and Other Health Inputs

General and supplemental feeding and health inputs should go together; package them appropriately.

5.4.1 Analysis

In Sudan, supplemental feeding programs were planned separately from the general feeding program. As a result, the emergency program did not meet the nutritional needs of many of the

most disadvantaged as effectively as it could have. General and supplemental feeding programs should be planned jointly.

Health interventions are rarely fully incorporated with general relief and rehabilitation efforts. However, it is well known that when children are poorly undernourished, diseases such as measles and diarrhea become killers. For this reason, health inputs should be programmed jointly with feeding activities, and health activities should be fully integrated with other disaster relief responses.

5.4.2 Recommendations

-- General and supplemental feeding programs should be planned and implemented as joint programs unless there are obvious reasons not to do so. Food shipments for both programs should be planned to arrive together.

-- Basic or primary health care should go hand in hand with efforts to meet minimal food requirements. Although avoiding outright starvation is the basic problem, many drought-related deaths are due to diseases such as cholera, measles, malaria, and acute diarrhea for which there are remedies.

5.5 Adapting Assistance to Stages of Drought

Droughts have stages; plan and implement accordingly.

5.5.1 Analysis

Droughts have stages. Because their impact may differ from year to year, planning and implementing relief efforts must vary accordingly. Within the long-term development context, the stages of a drought must have their corresponding response phases, such as problem identification and planning, relief operations, and rehabilitation. Planning and implementation for year-to-year changes and these different stages of a drought will usually be different.

In Sudan, the effects of the drought developed slowly over several years, finally becoming so severe in 1984-1985 that almost everyone in the drought area was affected. The following year, many people had enough food, although many still did not. During the earlier period, as the situation grew worse, A.I.D. moved as much food as it could to people in Western Sudan. Be-

cause so many people were desperate, targeting was not a major issue. In 1986, however, the drought entered a new, less severe stage, and targeting is now very important because local grain can now be purchased in some areas of the country. Thus, overall planning and implementation of the emergency food program in Sudan in 1986 should be substantially different than it was in 1985.

Preplanning and detailed operational planning can account for differences between drought years and between drought stages. These differences, if part of an overall plan, will help integrate development planning with the emergency food assistance program.

5.5.2 Recommendation

-- Preplanning and detailed operational planning should account for differences between drought years and between drought stages. Appropriately tailored responses should be part of an overall plan so that the emergency assistance programs is integrated to the extent feasible with development planning.

5.6 Backup Plans

Even the best efforts sometimes fail; have a backup plan.

5.6.1 Analysis

Even the best plans can go astray. Unforeseen events such as change of government, civil disorders, or shifting governmental priorities can throw off a timetable and require flexible, quick, imaginative action. To prepare for such eventualities, it is desirable to have a backup plan.

In Sudan and other drought-stricken countries, there are many constraints to effective response to the drought. Most of these constraints are related to getting sufficient, appropriate food to people on time--the ultimate objective of emergency food assistance. In Sudan, for example, failure to pre-position the food before the rainy season, when the roads become impassable, necessitated high-cost solutions such as the use of helicopters to reach isolated areas to prevent starvation. Movement of food can also be significantly affected by elections, religious holidays, change of government, political instability, and so on.

The negative effects of these difficulties can be minimized if their potential occurrence is recognized in advance and requests, approvals, shipments, and distribution schedules are worked out accordingly.

5.6.2 Recommendation

-- Emergency food assistance plans should have strong contingency plans for key elements of the program so that planners and those implementing the plans will have alternate solutions if the preferred selection does not work.

5.7 Monitoring and Evaluation

Impact is ephemeral; monitor and evaluate it carefully.

5.7.1 Analysis

The impact of emergency food assistance programs is often difficult to assess. Baseline data are seldom available, no "controls" exist, people are too busy to collect and analyze data, and so on. As a result, it is usually not possible to evaluate a program in terms of lives saved, proportion of nutritional requirements met, severe or serious malnutrition averted, or the number of malnutrition-related medical difficulties avoided. However, to improve emergency food assistance, such assessments are needed. This requires conscious attempts to establish monitoring and evaluate systems as a part of emergency food assistance programs to detect and measure impact.

5.7.2 Recommendations

-- Mechanisms for monitoring and evaluating impact should be made a part of emergency food assistance efforts.

-- Additional data should be collected to enable the impact of emergency food programs to be determined. Preplanning should include data collection for baseline purposes.

5.8 Management

Management is fundamental; ensure its excellence.

5.8.1 Analysis

USAID's food emergency efforts are customarily managed by persons with little or no experience in planning and implementing such programs. Often, these programs are understaffed as well. This contradicts A.I.D.'s own practice in most other areas where it carefully matches experienced people with their tasks. It results in less well-managed programs with reduced impact and higher costs than necessary.

Moreover, food emergencies--because they tend to be chaotic, fast-moving problems--are highly amenable to good management practices, which impose discipline and a strong sense of timing and resource organization and control on situations. These emergencies also require the involvement of experienced personnel. A person who has worked on the logistical aspects of food emergencies will be able to confront the logistic problems of an emergency program more efficiently than someone who has not. In Sudan, for example, the capacity of the Sudan Railroad Company (SRC) to ship food was estimated to be 1,200 to 1,500 MT per day. This was far too optimistic--SRC never shipped more than 750 MT per day and that only for a very short period of time. Someone with more logistic experience would have recognized the need to alter the plan to depend totally on the SRC while there was still time to develop an effective alternative.

5.8.2 Recommendations

-- A.I.D. should assess the management of each food emergency situation. Additional experienced personnel should be supplied if needed, and sound management practices should be required.

-- A.I.D. should establish a fast decision track for emergencies and staff it with senior personnel who have the authority to get things done.

APPENDIX E

DISTRIBUTION PERFORMANCE EVALUATION CALCULATIONS FOR THE DARFUR AND KORDOFAN REGIONS

1. GOAL

To provide 430 grams of grain equivalent to the at-risk population in the two regions (2.0 million out of a total population of 6.3 million.)

2. RESOURCES

Title II Sorghum

-- First request	9-14-84	82,000 MT	
-- Second request	1-11-85		75,000 MT
	2-28-85		75,000 MT
	3-25-85		100,000 MT
	Subtotals	82,000 MT	250,000 MT
	Total	332,000 MT	

The two requests together were to provide sufficient sorghum to meet the grain equivalent needs of the two regions--Darfur and Kordofan. The 332,000 MT of sorghum, at a grain equivalent of 430 grams (.00043 MT) per person per day, was considered sufficient to supply the at-risk population of 2.0 million for 386 days. Based on private voluntary organization (PVO) field reports and evaluation team estimates, the dilution factor (or loss) was put at 20 percent. Thus 80 percent of the amount distributed from Port Sudan reached beneficiaries.

3. FORMULAS/DATA

-- Tons of sorghum supplied = Number of rations
Daily ration (430 grams)

- $\frac{332,000 \text{ MT}}{.00043 \text{ MT}} = 772,093,023$ rations

-- Number of rations = Number of days supply
Number at risk

- $\frac{772,093,023}{2,000,000} = 386$ days

-- Population served x daily ration = amount of sorghum needed per day

- 2,000,000 X .00043 MT = 860 MT of sorghum required per day

4. PERFORMANCE

4.1 Two Calculations

1. Amounts Delivered as Percentage of Amounts Approved

-- As of April 30, 1985

- Amount delivered to dropoff points = 66,616 MT

- Amount delivered less 20 percent dilution factor = 53,293

  53,293 MT Total Delivered / 332,000 MT Total Approved = 16 percent of ration or 69 grams per day per person

-- As of August 31, 1985

- Amount delivered to dropoff points = 210,763 MT

- Amount delivered less 20-percent dilution factor = 168,610 MT

  168,610 / 332,000 = 51 percent of ration or 218 grams per day per person

-- As of October 31, 1985

- Amount delivered to dropoff points = 267,774 MT

- Amount delivered less 20-percent dilution = 214,219 MT

  214,219 / 332,000 = 65 percent or 277 grams per day per person

(Note: If one assumes 20 percent loss or dilution factor from all causes between port and beneficiary, maximum attainable percentage is 80 percent.)

2. Deliveries as a Percentage of Food Arrivals at Port Sudan

-- As of April 30, 1985

- Amount of sorghum delivered to port = 82,000 MT
- Amount of sorghum delivered to dropoff points (without dilution factor) = 66,616 MT
- Amount delivered

  66,616 MT = 81 percent
  82,000 MT

- Amount delivered to dropoff points less 20-percent dilution = 53,293
- Amount delivered to dropoff points less 20-percent dilution

  53,293 MT = 65 percent
  82,000 MT

-- As of August 31, 1985

- Amount of sorghum delivered to port = 332,000 MT
- Amount of sorghum delivered to dropoff points (without dilution factor) = 210,763
- Amount delivered

  210,763 MT = 63 percent
  332,000 MT

- Amount delivered to dropoff points less 20-percent dilution factor = 168,610
- Amount delivered less 20-percent dilution factor

  168,610 MT = 51 percent
  332,000 MT

-- As of October 31, 1985

- Amount of sorghum delivered to port = 332,000 MT
- Amount of sorghum delivered to dropoff points (without dilution factor) = 267,774 MT

- Amount delivered (without dilution factor)

  $\frac{267,774 \text{ MT}}{332,000 \text{ MT}}$ = 81 percent

- Amount of sorghum delivered to dropoff points, less 20-percent dilution = 214,219 MT

- Amount delivered less 20-percent dilution factor

  $\frac{214,219 \text{ MT}}{332,000 \text{ MT}}$ = 65 percent

(Note: Where 20-percent dilution factor is used, maximum attainable percentage is 80 percent.)

4.2 Comment

The analysis above shows that deliveries in the field fell far short of the goal of providing the at-risk population of 2.0 million with 430 grams per person per day if measured against the planned amounts (i.e., 16 percent by the end of April rising to 65 percent by the end of October).

However, when distribution efforts are measured against food arrivals in Port Sudan rather than overall approved amounts of sorghum, the performance record improves (65 percent by the end of April and 85 percent by the end of October).

4.3 Data Sources

-- Amounts approved and arrival dates at Port Sudan are taken from USAID records

-- Amounts delivered are taken from Arkel-Talab records

-- The 20-percent dilution factor is based on PVO field reports and conversations in the field with food aid recipients and PVO representatives

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